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ORIGINAL ARTICLES

THE TREATMENT OF GASTRIC ULCER.

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The oft quoted statistics of Greenough and Joslin (*Amer. J. M. Sci.*, No. 328), those of C. P. Howard, and those from the Johns Hopkins Hospital (Pract. Med. Osler Vi Ed.) give us a conception of the frequency of gastric ulcer in America.

The first mentioned investigators were able to determine the relative frequency of the disease in different parts of the United States as shown by the following table:

MEDICAL ADMISSIONS.	DIAGNOSIS OF GASTRIC ULCER.
Massachusetts General Hospital, Boston... 13,097	187 or 1.43 per cent
Johns Hopkins Hospital, Baltimore..... 9,517	30 or 0.32 per cent
Cook County Hospital, Chicago..... 3,930	6 or 0.15 per cent
Arapahoe County Hospital, Denver..... 5,040	6 or 0.12 per cent

Howard analyzed the records of 161,589 medical admissions into American Hospitals, finding 930 instances of gastric ulcer or 0.57 per cent. In fifteen years 44,378 admissions in all services of Johns Hopkins Hospital afforded 0.18 per cent. of cases of the disease.

From the above it appears that gastric ulcer occurs with varying frequency in different parts of the United States, occurring much oftener in New England than in other localities from which statistics are available.

The disease occurs more frequently in Great Britain and the Continent than in America as is shown by statistics from the following named cities.

Edinburgh, 2.2 per cent. of medical admissions.

Berlin, 1.33 per cent. of medical admissions.

London, .74 per cent. of medical admissions.

According to Welch (Pepper's Sys. Med.) who is so widely quoted, in 32,052 autopsies made in Prague, Berlin, Dresden, Erlangen and Keil, open ulcers or cicatrices were found in about five per cent. of persons dying from all causes. Welch states: "It may be considered reasonably certain that at least in Europe open gastric ulcers are found

on the average in from one or two per cent. of persons dying from all causes." The ratio of cicatrices to open ulcers he places at three to one. In different parts of the Continent the disease varies in frequency. Backmann (abs. *Wiener Klin. Woch.*, May 4th-04) in a study of the frequency of gastric ulcer in Finland, states that in 3577 autopsies made in Helsingfors, ulcer was found in eighty-two cases, 2.29 per cent., concluding that the disease is as prevalent in Finland as in other countries. He comments upon the rarity of the disease in Russia and Galacia, stating that in 6000 autopsies made at Alexander Hospital in St. Petersburg, ulcer of the stomach was encountered but twice. In the Marie Magdalen Hospital with 3,500 admission yearly, in the years of 1886 and 1887, not one case of the disease was seen.

It is said that the disease is common in Eastern Siberia. In Northern Germany and Denmark the disease is frequently encountered. In France the disease does not prevail to the extent it does in Great Britain or Germany.

The greater susceptibility of women to gastric ulcer is well known. Welch found in 1699 cases, 40 per cent. male and 60 per cent. female. Brinton (Welch) puts its average higher—two to one.

In cases studied by Greenough and Joslin, the proportion was 157 females, 30 males—five to one.

It has been found that the disease is most frequent in women from twenty to thirty years, in men from thirty to forty years.

Osler states (*Pract. Med.* 6 Ed.) that in eighty-two cases observed by him forty-eight were males, twenty eight females. Comparing this with the ratio of women to men seen in the Boston series, the contrast is very striking. It is true the cases analyzed by Greenough and Joslin show a much greater susceptibility of females to gastric ulcer than do other statistics with very few exceptions. "The explanation of this great preponderance of ulcer cases in females in Boston we must leave un-answered," they state.

A conclusion arrived at by Greenough and Joslin from their studies of the cases at the Massachusetts General Hospital is that there is much to suggest a distinct variety of the disease in the two sexes. Thus in the cases analyzed the mortality among males was 30 per cent, among females 9 per cent.

Hemorrhage causes the death of 17 per cent. of the male patients, but only 1.27 per cent of the females.

The average age in men is 37 years; in women 27 years.

In eighty-two cases seen in Johns Hopkins Hospital by Osler, the larger number of cases in females occurred between fifteen and twenty-five years. In men the larger number of cases occurred between forty and fifty years.

No one view of the pathogenesis of gastric ulcer, round ulcer or peptic ulcer is accepted by all and whether or not the first cause

of round ulcer of the stomach has been determined, certain facts have been established which afford positive indications for the treatment. We may, I think with profit, briefly review factors ascribed as etiological and predisposing.

Van Ijzeren by nerve section in rabbits, below the diaphragm, found that after a time pylorus cramp followed and later ulcer without hyperchlorhydria or other changes in the acid secretion. This has attracted much attention and the nerve theory of the production of gastric ulcer seemed to be strongly reinforced. Donati (*Abs. Wiener Med. Woch.*, October, 1904) in experiments upon thirty-seven animals, was unable to confirm Van Ijzeren results and concludes that an altered nerve function as the main cause of gastric ulcer is not to be thought of.

Bloch, of Copenhagen (*Abs. Muenchener Med. Woch.*, April 25, 1905) explains the frequency of occurrence of ulcer of the stomach at the lesser curvature and near the pylorus, upon anatomical grounds. He has found upon careful investigation that the pyloric part and the part along the lesser curvature, have practically the same appearance in dilated and contracted states of the stomach, while the musculature of the remainder of the stomach forcibly contracts into wrinkles so that areas denuded of epithelium are protected from the action of gastric juice. Hemorrhages into the mucous membrane and hyperacidity of the gastric juice oftenest play a part in the production of gastric ulcer. He believes micro-organism plays an unimportant part in the production of round ulcer.

Grawitz (*Klin. Pathologie des Blutes*, p. 445) states that "the function of the stomach and the diseases of the stomach are closely associated with the conditions of the blood."

Anaemia and altered conditions of the blood predispose to certain diseases of the stomach, particularly through faulty nutrition of the mucous membrane of the stomach, round ulcer may develop.

It has been shown by Quincke and Daetwyler that when by repeated venesection animals were rendered anaemic, it was possible by wounding the gastric mucous membrane, to induce ulceration, and further by Silverman who by experimentation showed that when hemoglobinaemia was induced by injection into the blood of the animal, hemoglobin destroying agents, ulceration of the stomach, of the round ulcer variety, would form after wounding the surface.

Futterer (*J. A. M. A.*, Vol. xxxviii. No. 4) resected areas of gastric mucous membrane from animals, removed blood by venesection directly after the operation, with the result that complete healing ensued after two weeks.

After repeated blood lettings, he produced conditions in the animal which led to the formation of the round ulcer. From the injection into the blood of animals of the hemoglobin destroying agent pyrogallol, Futterer produced ulcer of the stomach.

The theory of Virchow speaks for altered conditions of the blood as the basis of at least many cases of gastric ulcer. Gastric and duodenal ulcers, as has long been known, follow burns of the surface of the body. This as yet has not been satisfactorily explained. It appears more than probable that this is due to toxic substances developed in the blood or absorbed from the burnt area.

Heart disease, liver disease, and arterio sclerosis, are responsible for cases of ulcer of the stomach. In the cases seen at the Johns Hopkins Hospital by Osler in which, strikingly different from the Massachusetts General Hospital cases, the larger number occurred in men, and the larger number in men between the ages of forty and fifty years, it would be interesting to know to what extent arterio sclerosis, as an etiological factor, entered into these cases. We have not been able to find in the reports of the cases anything bearing upon this feature.

It has been shown that in the great majority of cases of gastric ulcer hyperacidity is present.

Leube recognized the increased hydrochloric acid content of the gastric juice, with coincident anaemic condition as an important etiological factor in the production of the disease.

Riegel believed the absence of increased amount of hydrochloric acid in the gastric juice in ulcer, exceptional. He believed, however, the hyperacidity to be neither the cause nor the effect of the ulcer, that injuries to the gastric mucous membrane, whether from trauma or from circulatory causes, led to the formation of ulcer only when hyperchlorhydria was present permitting of self-digestion of the membrane, whereas in the presence of gastric juice of normal constituents healing occurs rapidly.

Occasionally does it happen that in the employment of the stomach tube, small discs of mucous membrane are torn from the surface and ulcer does not follow.

Matthes, quoted by Riegel, found that mechanical injuries to the gastric mucous membrane even of large extent, healed rapidly, but that healing did not occur when he introduced daily into the stomach of the animal, a solution of hydrochloric acid. Mechanical injuries alone will not produce gastric ulcer.

A few years since, a so-called human ostrich made his appearance in Kansas City. For years he had given exhibitions of glass eating, of swallowing nails and knife blades. In an attempt to surpass himself, he swallowed a large barlow knife, which proved his undoing. He suffered considerably, entered the German Hospital, where he was operated upon by Dr. Von Quast. Two jackknives, five knife blades, about one hundred wire nails, and screws, besides carpet tacks, a wire staple and fragments of glass, were removed from

the stomach. Dr. Von Quast informs me that a careful search of the stretched and thinner stomach wall revealed not an ulcer.

That ulcer heals and is cured is shown by post-mortem observation. You will recall that Welch estimates that in Europe, open ulcer or cicatrices occur in five per cent. of persons dying from all causes, the ratio of cicatrices to ulcer three to one.

Cruveilhier, seventy-five years ago, recognized the characteristics of round ulcer—the chronicity and the tendency to recur. The tendency to recur must be the greater if the patient is allowed to return too early to the conditions and habits of living as when attacked. Surely impoverished conditions of the blood and hyperchlorhydria are at least great predisposing causes of gastric ulcer, and these conditions should be particularly treated. Certainly the condition hyperchlorhydria as a cause of gastric ulcer has not been given up. Musser (*J. A. M. A.*, May 5, 1906) in reporting a case of perforating ulcer of duodenum just beyond the pyloric ring, states: "It is true the hyperacidity from which he suffered was in all probability the cause of the ulcer, and this in turn might have been the product of a neurosis."

The method of treatment should be that which looks first and foremost to the improvement of the nutrition of the patient—the treatment which in the shortest period of time improves the quantity and quality of the blood, raising the resistance of the tissues of the body. For, from such a treatment may we expect rapid healing of the ulcer, which is all important; for we know the older the ulcer the more induration of the edges may we expect.

The treatment which for years has been generally employed, particularly after hemorrhage, is insistence upon absolute rest in bed, bodily rest and rest for the stomach. Rest for the stomach is secured by starvation for first days, later by following the plan urged by Cruveilhier in 1830, the absolute milk diet. Fleiner's plan largely followed is as follows:

The first few days after a hemorrhage nothing is given by the mouth but small fragments of ice to allay thirst and favor contraction of the stomach. To maintain nutrition of the body nutrient enemata are administered. After a few days small quantities of milk are given by the stomach, (Leube milk in small quantities from the first day. Ewald after three days) which for four weeks is very gradually increased in amount until not more than nine ounces are administered, every two or three hours. Then cooked rice, barley, arrow root are added and after six weeks the use of scraped meat is begun. Fleiner and Kussmaul have urged the use of large doses of bismuth subnitrate as an adjunct to the treatment.

These principles of treatment were accepted and have been generally employed. Until comparatively recently very little difference of opinion upon this method has been voiced.

If the prime consideration be the improvement of the quality of the blood and the improvement of the nutrition of the patient in the shortest possible time, it is well to carefully consider the merits and demerits of the plan of rectal feeding.

The use of such enemata is not unattended with perplexities and disappointments. In many cases they can be employed for a short time only, in other cases not at all, for the reason they prove irritating. The teaching in Rosenheim's clinic in Berlin is that nutrient enemata should not in any case of ulcer be exclusively employed for more than eight days.

In a careful study of the use of nutrient enemata Edsall of the Pepper Laboratory some years ago found that elimination was always in excess of absorption.

Osler (Pract. Med.) states, "While theoretically it is better to give the stomach complete rest by rectal feeding, yet in practice this strict limitation is not found satisfactory.

Prof. Lenhartz of Hamburg has urged the employment of a diet richer in albumin and more concentrated than the exclusive milk diet.

Theoretically a superabundance of hydrochloric acid in the gastric juice is fixed by proteid substances. Reigel has stated that the rational dietetic treatment of hyperchlorhydria is the use of albuminoids and declares it not proven that these substances increase hydrochloric acid production.

Boas (Ernährungs Therapie, Leyden Vol. 11 p. 75.) states "experiments on dogs only are reported which suggest that the meat diet causes an increased and persistent superacidity. The advice however that the use of meat should be absolutely interdicted for those suffering with superacidity appears as yet not sufficiently well grounded."

Wagner (*Muenchener Med. Woch.*, 1904 No. 1) has reported the results of the treatment of sixty cases of ulcer in the service of Prof. Lenhartz, at Eppendorfer Krankenhaus by the Lenhartz method. In every case of this series was the history of hematemesis. Absolute rest in bed is enforced for in most cases four weeks. In cases of grave hemorrhage for the first two weeks, urine and stools are collected in bed. The patient made tranquil, disturbed as little as possible. An ice bag placed on the stomach lessens the tendency to distension and mitigates the suffering. On the day of the hemorrhage the patient receives iced milk by the spoonful, to the amount of 200 to 300 ccm. and with this, one, two or three fresh eggs in twenty-four hours, well beaten and iced. In addition two or three times a day subnitrate of bismuth suspended in water is given usually 2.0 gr. at dose. The bismuth is repeated throughout the next ten days as required.

In many cases vomiting and pain ceased at once; with very few exceptions, all vomiting and pain in from one to three days had

disappeared. The fixation of the excessive amount of hydrochloric acid is held to be the main reason for the prompt relief of symptoms. It is stated that latterly in Lenhartz's service some patients received iced egg by the spoonful a few hours after hemorrhage.

The quantity of food is daily increased by 100 ccm. of milk and six to eight eggs are taken. For the remainder of the period this amount of daily nourishment is continued. The amount of milk never increased above 1 L. per day.

In the plan of Lenhartz, the use of raw scraped beef is begun on the sixth day. For two or three days 35 g. are given in small portions in the twenty-four hours, the amount is then increased to 70 g. for the remainder of the period. After two weeks, thoroughly cooked rice and softened zwieback are permitted.

The use of iron is begun early and only as Bland's pills.

"Morphine or other drugs for the relief of pain were never required."

The features of this method of treatment are (a) stomach feeding (b) the employment of diet very rich in albumin (c) the large amount of food administered.

In a recent paper E. Wirsing (abs. *Muenchener Med. Woch.*, October, 1905) reports the results of forty-two cases of gastric ulcer treated in St. Hedwig's Hospital in Berlin, according to Lenhartz procedures. He concludes from the study of this series that in non-hemorrhagic cases the method has apparently advantages over the Leube method. In those cases with fresh hemorrhages the method gives more lasting results.

In many particulars the method of Lenhartz must appeal to us. It has been given us after some years of trial and after comparisons have been made in the Eppendorfer Hospital between this plan of treatment and the Leube-Ziemssen. Reports from the hospital speak decidedly in favor of the Lenhartz method.

When from irritability of the stomach, or when in particular cases, rectal feeding must be for a time employed, the better procedure is to cleanse the surface of the bowel by use of small quantities of warm water. After one hour the nutritive enema is introduced by means of soft rectal tube connected with a suitable funnel, the patient on left side with raised pelvis. No more than three enemata a day should be employed. Egg and water mixtures are not absorbed from the colon without the addition of sodium chloride.

The following mixture is recommended by Boas and is used by Ewald and Kuttner:

¼ L. Milk.

Yolk of two eggs.

1 teaspoonful salt

1 tablespoonful flour.

Add tablespoonful of wine.

Edsall has concluded from his own observation and from a study of the literature, that chronic continuous gastrosuccorhœa does exist and may lead to ulcer or gastrectasis.

Certain cases of ulcer are accompanied with hypersecretion and motor insufficiency. In the treatment of these cases systematic use of the stomach tube must be made, not more than $\frac{1}{2}$ pint water used in washing

A difference of opinion exists as to the propriety of using the stomach tube, gastric ulcer present. Robin (*Internat. Clinics*. Vol. ii S. xii) does not approve of Fleiner procedure, nor the use of irrigations of nitrate of silver, for the reason that the tube is employed.

In the Cohnheim clinic is taught that the introduction of the tube into the stomach of any chlorotic woman is fraught with danger.

Kuttner assures us that in Ewald's clinic no case has been injured by the introduction of the tube. The older the ulcer the less the danger

Statistics show that, unlike fatal hemorrhage, perforation in gastric ulcer is more frequent in women than in men. In 139 cases of perforated ulcer in females, four-fifths occurred before the age of thirty-five. The average age at which perforation occurs in women is twenty-seven. In the men forty-two (Brinton from Welch.)

The direct medication of the ulcer is important. The measures employed look not only to the treatment of the ulcerated surface, but to associated conditions, notably gastric catarrh, and are to be used in cases of chronic ulcer.

The method of Fleiner is well known. Into the empty and cleansed stomach a quantity of Bismuth (10 g. or more) suspended in 200 ccm. of water is introduced.

The patient changes positions of the body that the bismuth comes in contact with the entire stomach surface. The fluid from which the bismuth has been deposited is then removed.

The use of bismutose has been urged. The advantage claimed for this compound is that the percentage of proteid entering into its composition (21 per cent.) aids in fixing the hydrochloric acid. The compound is highly constipating. Nitrate of silver is largely employed, and by Boas is preferred to bismuth. His plan is to give a tablespoonful of a solution (0.2 in 120, increased to 0.3 in 120 and finally 0.4 in 120). This is given before meals and over a period of about two weeks.

Another plan is to irrigate the stomach with a solution of nitrate of silver. 300 to 500 ccm. of a solution (1-2000 to 1-1000) is introduced into the cleansed stomach, allowed to remain there three minutes, then drawn off, after which the stomach is washed.

Treatment of predominating symptoms: The treatment of gastric hemorrhage has recently been considered by Ewald (abs. *Wiener Med. Woch.*, Mar. 1906.) He reviews the usual remedies employed. He has seen no benefit from the use of adrenalin; gelatine in generous quantities by the mouth, with and without iron chloride or fruit juice gave no result, neither did gelatine solution injected into rectum. He saw no benefit from calcium chloride solution and states Boas, as well, has no confidence in its use.

Ewald warmly recommended the following procedure which he employed in eight cases of hemorrhage extending over a number of days, after other procedures had proven unavailing.

The patient is given a small injection of morphine, the pharynx cocainized (that retching may not ensue.)

The stomach tube is introduced and the stomach irrigated with ice cold water. The bleeding at once ceased. The tube is pushed a short distance beyond the cardia and only pushed further when the stomach is filled with water. The washing is continued until blood clots and other contents are washed out, the wash water coming away uncolored. To combat collapse, camphor and ether injections are employed, heat to extremities, and if required the blood volume increased by normal salt solution introduced into tissues of supraclavicular region.

For the treatment of stomach pain we have opium and belladonna. For relief of pain in gastric ulcer belladonna is the better. The weight of evidence supports the claim that opium increases the secretion of hydrochloric acid.

In Ewald's clinic it is taught that there is no healing so long as morphine is given.

The following mixture is of value in pain:

Chloroform	1.0
Bismuth subnit	15.0
Ag. dest.	150.0

Of this a tablespoonful is given every hour, the dose gradually diminished.

Belladonna may be used as follows:

Ext. belladon	0.2
Magnes ust.	15.0
Nat. bicarb	25.0

A teaspoonful of this powder should be given one to two hours after luncheon and dinner, bismuth subnitrate to be given in the morning.

Cohnheim is a warm advocate of the use of olive oil in spasm of the pylorus from ulcer. The oil is given in the morning on the empty stomach; if cramps are present, two or three times a day.

For inordinate thirst the following will be found beneficial:

Cocain	0.3
Aq. Amygdal. Amar.....	15.0

Ten drops to be given three times daily.

Mansell Moullin (*Lancet*, 4253) in explanation of the cause of pain in ulcer states that the abdomen opened under local anaesthesia, neither pinching nor cutting the stomach will give pain. Only the peritoneum is painful, and this in the highest degree. When the area involved by the ulceration attaches itself to the peritoneum or by bands of adhesion traction is made on the peritoneum by movements of the stomach, the pain which characterizes gastric ulcer is evidenced. He believes that this is the explanation of the pain occurring soon after taking food, and of the fact that the most painful ulcers are those situated on the most movable portion of the stomach, namely, under curvature and the pyloric region. Inflammation of the lymph vessels in the region of the ulcer is continued into the peritoneal lymph vessels and render the area toward the pylorus sensitive.

The lymph vessels converge toward the pylorus while the cardia is relatively poor in lymph vessels. This is the reason for less tenderness in the cardiac end.

Constipation in gastric ulcer is to be avoided, as constipation tends to increase the acidity of the stomach secretions.

The treatment followed in Ewald's clinic is as follows:

Regulate the bowel movement in the first days by the use of warm water irrigations. Later give every morning $\frac{1}{4}$ liter Carlsbad water, barely warm—never hot.

The patient should have not more than two movements daily. Vichy water is at times better tolerated. Vichy Hospital is preferred.

Artificial Carlsbad water can be made from artificial Carlsbad salts of the German Pharmacopoea as follow:

Sod. Sulph Exsic.....	44
Pot. Sulph	2
Sod. Chlor.	18
Sod. Bicarb.	36

Six drams of this salt to one liter of water.

More frequently, perhaps, is the following used:

Sod. Sulph	50
Sod. Bicarb.	6
Sod. Chlor.	3

Dose: One teaspoonful.

The return to the full diet should be gradual and the patient carefully instructed in the dietary.

After eating the patient should rest in bed for a time, all clothing loosened. The patient should at no time wear corsets; only loosely fitting clothing should be worn.

A towel dipped in warm water placed over the stomach covered with impervious material, then a flannel bandage will prove very useful.

In the Augusta Hospital recourse is had to the following procedure: The skin of the abdomen is thoroughly cleansed and rubbed with vaseline; over this is placed a layer of cloth and then a hot linseed poultice applied. These hot poultices are continued for twelve to fourteen days. The purpose of the thorough cleansing and vaseline is to prevent the formation of heat vesicles which may become pustular, leaving pigmentation. These poultices have a good influence over pain.

When there is tendency to hemorrhage or history of recent hemorrhage, the ice bag is used. Hot poultices should not be employed until three months from date of last hemorrhage.

The articles of food permitted must meet the following requirements: 1. Easily dissolved by the gastric juice. 2. Use does not hinder nor abnormally increase peristalsis. 3. The mucous membrane be not chemically, thermically nor mechanically irritated. 4. Easily taken up by intestine and appropriated.

When one considers that of the entire digestive process, the only voluntary act is that performed in the mouth, it is surprising that we so often fail to urge upon our patients, careful and systematic mastication.

The treatment of digestive disorders should begin in the mouth. By the act of chewing more is accomplished than the trituration of food, the regulation and intimate admixture of the same with saliva. Pawlow has shown the marvelous influence of taste and palatability of food upon the stomach secretion and this influence is intensified by deliberate chewing. It is certain that by systematic chewing a greater amount of energy, from a given amount of food, is derived, the procedure lightening the work of the stomach as well.

In the clinical sense an ulcer of the stomach may be regarded as healed when vomiting, pain and sense of pressure after eating has disappeared, the patient free from discomfort. The weight of the body increased to the average weight of individuals of the same height, and the composition of the blood approximately normal.

I wish finally to submit the following recent statistics bearing upon the curability of gastric ulcer by medicinal treatment:

Russell, of Birmingham General Hospital (*Lancet*, No. 4196), followed the after history of cases of ulcer which had been treated in the wards of that Hospital from 1892 to 1899.

In the eighty-nine cases treated in this period the after histories of forty-seven cases were obtained.

The direct mortality from the disease amounted to 2.1 per cent. 42.6 per cent. ended in recovery. Sixty-four per cent could not at the

time of the report be classified as they seemed on the border line between recovery and continuance, and might fall into either class. The length of time over which these cases extended from first hematemesis to last report is as follows:

1-3 years	12 cases
3-4 years	5 cases
4-5 years	9 cases.
5-6 years	7 cases.
6-7 years	3 cases.
7-8 years	2 cases.
8-9 years	1 case.
9-10 years	3 cases.
10-11 years	2 cases
12-13 years	3 cases.

Russell states that in 6040 deaths in the Workhouse Infirmary at Birmingham from 1892 to 1901 only two were attributed to gastric ulcer. "There were of course other deaths from peritonitis and it is possible and probable that some of these may have been due to perforation of a gastric ulcer. Post-mortem examinations had not been made, but it seems clear at all events that gastric ulcer is not a frequent cause of death in the institution, and the net results of my inquiries are to show that apart from first attacks the disorder is one with but a small mortality."

Schultz of Breslau (abs. *Wiener Klin Woch.*, Dec., 1903) studied the record of 291 cases, observed in Breslau and Hamburg with the view of determining the permanency of cure of gastric ulcer by medical treatment. The subsequent histories of 157 cases could be followed.

In 64 per cent. treated, according to the Ziemmissen-Leube principles, cure resulted. In 18 per cent. of the cases treatment did not prevent recurrence, but a greater part of these were eventually cured, while 10.4 per cent. continued to suffer. The direct mortality was 7.6 per cent.

ABDOMINAL INJURIES.*

BY H. C. DALTON, M. D., ST. LOUIS.

It would take us too far afield to discuss all the injuries of the abdomen in one paper: I have, therefore, left out of view injuries to the abdomen due to stab and gun shot wounds.

There is not a chapter in the realm of abdominal surgery that is more deserving of thorough, painstaking consideration and study than is that devoted to abdominal injuries.

The elementary state of our knowledge concerning the early clinical manifestations of serious visceral injury is *prima facie* evidence of the fact that the subject has not been accorded sufficient attention.

Experience continues to emphasize the contention that every abdominal injury, no matter how trivial it may at first appear, must be regarded as of very serious import until it proves otherwise.

Whenever an individual has received an abdominal injury, whether it is a contusion, a stab, or a gun shot wound, the one appealing and important question which presents itself to the experienced medical attendant is: "Is there a serious abdominal lesion?" This is, indeed, a very perplexing question, since an apparently insignificant blow may cause very grave visceral injury; and since a really trivial extra-abdominal lesion may cause symptoms closely simulating the early clinical manifestations of intra-abdominal rupture. It is also a fact that very grave visceral injury may cause no immediately prominent or guiding symptoms. Perhaps a more systematic and painstaking study will enable the trained attendant to more frequently correctly read the presented picture.

Owing to the fact that the consensus of opinion agrees that, with the exception of hematuria pointing to some injury of the urinary tract; rectal bleeding guiding us to the mesentery or lower portion of the intestinal tract; and hematemesis indicating a gastric or upper intestinal tract lesion, there is absolutely no symptom, or group of symptoms which clearly indicates a penetrating wound of the abdominal viscera, and since every experienced physician concurs in the contention that the only safe and proper course to pursue is to immediately explore the wound, whether it be stab or gun shot, to its depth, thereby enabling the trained eye, and the examining finger to know whether or not a lesion exists, an abdominal contusion should always be considered seriously, and carefully watched. It is very necessary that we obtain a careful and complete history of the accident. We must find out just how the accident occurred; the char-

*Read at the annual meeting, Jefferson City, May, 1906.

acter of the force, the site of the impact; the condition of the patient, at the time of the accident; the immediate effects of the accident, as evidenced by the patient's ability to assume his vocation, etc., and the early clinical signs presented at the time of our visit must be carefully studied.

Character of the Force: This is very important. It is true a trivial blow may cause grave intra-abdominal trouble, so much depends upon existing conditions. It has been found that if the force be circumscribed and of high velocity, such as the kick of a horse, or a sudden severe punch with the fist, visceral rupture is very apt to occur. In fact Clevasse collected 36 cases of horse kicks of the abdomen in 35 of which intestinal rupture occurred. When the force is diffused, as in a slowly moving ponderous object, such as a carriage or wagon wheel over the abdomen, it is more than probable that either a solid organ will be fractured or a hollow viscus lacerated. Very frequently the bowel will be completely severed. Division occurs most often in the region of the duodeno-jejunal flexure. Very recently I operated upon such a case; a young boy, 12 years of age, was run over by a loaded wagon. As the boy suffered but little during the first day his medical attendant didn't consider the case a grave one. I was called on the third day. The patient was then suffering considerable pain, the pulse was 120, temperature 102; the abdomen tympanitic. Assisted by Drs. Roland Hill, A. E. Babler, and Samuel J. Baker, I opened the abdomen in the left linea semilunaris. I chose this site because a contusion was noted at this point. The small intestine was found completely severed down to the mesentery. Fecal matter was everywhere in evidence. This was sponged out very carefully, and the intestine closed by the Murphy button. The operation consumed but 30 minutes. The boy did not rally from the shock, and died three hours after the operation.

Had the operation been performed the first day of the injury I am persuaded recovery would have followed. I recall three other cases of rupture of the intestine due to blows upon which I operated while in charge of the St. Louis City Hospital. All recovered, but they were operated upon in a *few hours* after the injury.

Makin has found that 70 per cent. of intestinal ruptures are due to sudden, sharp blows. Crushing of the pelvis frequently causes intraperitoneal rupture of the bladder; a fall from a height may cause rupture of any of the abdominal viscera.

Site of Impact: It must be admitted that the site of impact does not always guide us to the seat of the trouble. It is also true that the external evidences of injury are not reliable criteria of the severity of the lesion.

I recall a case of this kind upon which I operated at the St. Louis City Hospital in the presence of Drs. L. I. Matthews of Joplin, and

Pinkney French of St. Louis, in which the external injury was scarcely noticeable, and yet a lacerated intestine was found. The operation was done two hours after the injury, the patient recovering without an untoward symptom, the recovery no doubt being due to the promptness of the operation before peritonitis had a chance to develop.

Anatomically the abdominal walls are thinner above the umbilicus, and offer less resistance than below that point, yet almost all of my cases of rupture of the bowel have been in the lower abdomen. Very recently Vaughan has recorded a case of left sided rupture of the diaphragm due to a blow upon the back. Senn reports a case of rupture of the intestine due to the patient slipping, striking the ground on his buttock. Smith reported two cases of rupture following a blow upon the back. A fall from a height may cause fracture of liver, mesenteric rupture, visceral laceration, etc.

In many instances the site of impact may enable us to clear up the diagnosis. When a blow in the right hypochondrium is followed by shock of a persistent character, signs of anemia, etc., we, of course, suspect hepatic rupture. When symptoms of urinary distress follow a blow upon the lumbar or hypogastric region, we direct our attention to the urinary tract. It seems needless to comment further.

The point I desire to emphasize is that an intra-abdominal rupture may follow a blow upon some part of the body other than the abdominal parietes. We should be guided by the presented picture in general.

Condition of the patient at the time of the Accident: By this I refer to the general health of the patient; the position and the expectedness of the blow, as well as the presence or absence of a hernia, abdominal tumor; the degree of distension of the hollow viscera, and the thickness of the abdominal wall.

The general condition of the patient at the time of the accident is of great importance. It is obvious that an enlarged, friable spleen or liver, a distended stomach or bladder, the presence of an inguinal or femoral hernia, the existence of an abdominal tumor, the thickness of the abdominal wall, as well as the expectedness of the blow, are all important factors. When a person expects a blow he naturally contracts his abdominal muscles, thereby rendering an otherwise dangerous blow of little moment. Treves states that the thickness of the bed of fat is much to be considered in arriving at a proper conclusion. The position of the patient at the time of the accident should also be taken into account.

Immediate effects of the accident: The severity and duration of the symptoms are variable. The immediate effects may be transient even though a visceral injury has occurred.

Mr. Burrows has reported a case of complete severance of the small intestine due to the passage of a carriage wheel over the abdomen. The patient walked half a mile to his home without special discomfort.

In many cases the patient considers the injury as of but passing moment until the appearance of abdominal pain, vomiting, or other pressing symptoms supervene. It is not uncommon to find a patient who has suffered severe abdominal injury who states that he has resumed his vocation shortly after the accident. The severity of the early symptoms depend quite materially upon the character of the intra-abdominal injury, the severity of the internal hemorrhage, the character and quantity of the escaped contents, and the amount of the self control possessed by the patient.

Very recently a critic has shown that "the more abundant and specialized the nerve supply of the part the more it will contribute to the production of shock when subjected to injury."

Initial shock is practically always present; its severity and duration are no reliable criteria of the extent of intra-abdominal injury. Experience has demonstrated that the degree of shock following a visceral rupture may not be more severe than would be expected from a superficial (extra-abdominal) injury. An accompanying hemorrhage will intensify, and, at times, especially if severe, prolong the initial shock; if the hemorrhage be continuous, the patient will, as a rule, present the clinical manifestations of internal hemorrhage—progressive acute anaemia, rapid small pulse, restlessness, air hunger, thirst, cold perspiration, and death. Persistent shock is always significant of grave danger.

Perhaps the most prominent symptom and the one to which attention is most frequently called, is pain. It may be the only early symptom complained of by the patient. McCosh and others have reported cases of mesenteric injury in which pain was a late symptom. In McCosh's case the patient, a lad of 10 fell from a fifth story window to the ground, alighting across the abdomen on an iron bar. Pain was absent for 36 hours, although signs of internal hemorrhage appeared shortly after the accident. At the operation McCosh found a large blood clot between the layers of the mesentery, while a portion of the intestine was gangrenous. Pain occurring hours or days after the passing of the initial shock may signify either perforation, mesenteric injury, or developing peritonitis. The pain may be continuous or colicky in character. It may be very severe. The ability of the patient to stand pain must be duly considered. In intestinal rupture, especially where there has been free peritoneal soiling, the pain is quite severe and often referred to the umbilical region. When the kidney has been lacerated or the ureter or bladder ruptured, the pain is referred to the course of the ureter, or perhaps

complained of in the thigh, testical, or lower hypogastric region; the testicle may be retracted, and painful to palpation (in rupture of the bladder the pain may be especially severe in the penis, or in the lower sacral area.) In splenic or hepatic fracture, pain may or may not be very severe, much depends on the character and severity of the fracture.

A very valuable diagnostic sign of intra-abdominal injury is *Muscular Rigidity*. Gentle, systematic palpation will most frequently enable the attending physician to detect its presence. According to Le Conte the rigidity which is characteristic of visceral injury is progressive in character, and when once developed is of board-like hardness, and uninfluenced by palpation. A gradually developing rigidity is often significant of peritonitis.

Mr. Knaggs believes that late vomiting is of much import. He contends that vomiting, appearing after the patient has apparently rallied from the immediate effects of the accident would justify an exploratory operation.

Persistent vomiting is of great diagnostic value. Hematemesis should guide us to the stomach and upper intestinal tract. In increasing pulse rate is ominous, and should always cause apprehension. Fowler attached great importance to its presence. He contends that a gain of 10 to 15 beats an hour is significant of intra-abdominal rupture. A rapid snial pulse, after the passage of the initial shock, is of decided import.

Facial Expression tells volumes,—too often we overlook its significance. The *facies abdominalis* is often a late sign of progressive peritonitis. This expression, when once seen, can scarcely be forgotten.

Neither localized tenderness, diminished liver dullness, changeable dullness, nor other signs, e. g. retroperitoneal emphysema, will be discussed, since their significance, when present, is quite well known. The absence of peristalsis in intestinal rupture is worthy of mention. D'Arcy Powers called attention to the fact that in duodenal perforation neither gas nor feces passed per rectum. The presence of blood in the rectum, as evidenced by rectal palpation, would point to an injury to the mesentery or lower intestinal tract.

Campbell bases his diagnosis of rupture of the intestine mainly on the severe initial pain and muscular rigidity.

Makin considers it a constant sign. Brewer asserts that deep seated localized pain, following an addominal contusion, especially if increased by pressure and accompanied by local or general rigidity, is one of the most constant symptoms of visceral injury.

He contends that the presence of deep seated pain, localized tenderness, and muscular rigidity, occurring shortly after the accident, warrants operation. Hartman believes that rigidity is an imperative

indication for laparotomy even though other signs are absent. Le Conte does not concur with Brewer, he prefers to wait for more definite symptoms. Personally I cannot but feel that the "waiting for development policy" is wrong, and strongly to be condemned. The character of the force, the shock, the pain, the muscular rigidity, the localized tenderness, the facial expression, the pulse, and the picture in general should guide us correctly. In truth, the simple fact that a patient who has been recently kicked by a horse, or run over by a carriage or a wagon, etc., complains of severe abdominal pain, and when the examining hand detects deep seated tenderness and muscular rigidity, should suffice to cause us to do an exploratory laparotomy. The characteristics of pleenic fracture are the site of the impact, the severe persistent pain in the left hypochondrium, the muscular rigidity, and the signs of internal hemorrhage. The same remarks, of course, apply to hepatic rupture, save, of course, the location.

Nausea: With or without vomiting is one of the conspicuous features of renal laceration. In vesical rupture, the urgent desire is to urinate and the inability to do so, the findings revealed by the catheter, should point to the ruptured site.

It is worthy of note that the passage of blood clots from the kidney may cause severe paroxysmal pain along the course of the ureter, and in the genitals. Cystoscopic examination of the bladder may tend to clear up the diagnosis.

Uncomplicated injuries of the pancreas are very rare. There are no characteristic manifestations to guide us. Robson has reported a case of acute hemorrhagic pancreatitis due to abdominal contusion. Injuries of the thoracic duct are exceedingly rare, and baffle all attempts at diagnosis.

The prognosis of visceral injury is, of course, grave. Statistics indicate that one out of every three of such cases die unless promptly operated upon.

Makin believes that rupture of the small intestine is more dangerous than a similar lesion of the large bowel, since the small bowel is more movable, and the fluid contents will pass out more readily and infect the peritoneal cavity. Early diagnosis and prompt surgical intervention offer the best results. Hence the prognosis may be condensed in a few words: *It depends upon the time and character of the treatment.*

In 1890 I reported in the *Weekly Medical Review* an interesting case of rupture of the liver and kidney caused by a man falling from the fifth to the third floor of a building, striking upon an iron bar. The bar struck him over the right lumbar region. Great nausea and faintness followed, but he did not vomit or lose consciousness. When admitted to the City Hospital an hour after the injury, the tempera-

ture was 100 degrees F., pulse 84, respiration 38. Pressure over right lumbar and hypochondriac regions gave considerable pain. There was no abrasion or contusion at the site of the injury. The urine was drawn and found bloody. Percussion gave dullness over the right lumbar region as high up as the axillary line. As there was hematuria I thought its source most likely renal. The patient's condition was so good that I did not deem an operation advisable. He was given an opiate, and an ice bag applied to the right lumbar region. At 10 A. M. next day, 19½ hours after the injury, the temperature was 102.2, pulse 110, respiration 48. The abdomen was greatly distended, and tender to pressure. Percussion gave dullness (flatness) over both sides of the abdomen, extending well up toward the median line. The hematuria continued. Believing that the hemorrhage was due to a ruptured liver, I opened the abdomen and found it full of clotted and fluid blood which was washed out with normal salt solution. Underneath the liver, near its outer portion, a rent about 3 inches in length was discovered which bled freely on manipulation. This was packed tightly with gauze. The patient recovered.

The first recorded operation for intestinal rupture was performed in 1883 by Bouilly. Craft of England was the first to perform colotomy in case of intestinal rupture. The patient died following the secondary operation. Moty, in 1889, performed the first successful operation for intestinal rupture. It seems needless to discuss the operative technique since the surgeon must be guided by the conditions found at the time of operation. In passing, I would like to call attention to the exaggerated Fowler posture; it is certainly of very great benefit in these intestinal cases where there has been free soiling of the peritoneal cavity. In closing, I want to emphasize the fact that every abdominal contusion, no matter *how insignificant* it may at first appear, demands prompt, painstaking consideration. In many instances the character of the injury, combined with a careful study of the presented picture are quite sufficient to guide us. The practitioner who waits for confirmatory signs of visceral rupture will wait in vain for a successful outcome.

DISCUSSION.

Dr. J. D. Griffith, of Kansas City: I want to thank the doctor for his most admirable and interesting paper. Gun-shot wounds of the abdomen have been particularly interesting to me. I was hoping that he would say something more on this subject but he cut it short. He has had a large amount of experience in the surgery of gun-shot wounds and could undoubtedly have given us much valuable information. As he has had experience also with the wounds produced by the two forms of weapons used, he could have given us some valuable information on that point. The two weapons which are used, are those we call the pistol, which discharges a leaden bullet, and the one used by the military branch of the Government, which carries a missile coated by a hard material, either nickel steel or copper steel. The difference in the

action of the two is so marked, that I was hoping he would call attention to it. We know that when fired at close range the leaden bullet tears and carries everything before it. The difference in a hard bullet is so marked that I want to call attention to a little experience I had during the late Russo-Japanese war. While there I had the pleasure of visiting a hospital in Tokio with 840 beds, and another hospital with 18,200 beds, and saw train loads of patients come in from Liaoyang, requiring practically eight days to get there from the front. Very frequently those men suffering from gun-shot wounds had never had the dressing changed, which was applied on the field. These bullets when they penetrate the abdomen, either kill at once, or do not leave conditions from which the patient will not recover. Those which gave indications that the injury was such that they might not recover, the Surgeon General told me, were taken to the first aid station for the purpose of stopping the flow of blood. Of course, these were cases where there was evidence of injury to the blood vessels; otherwise, they were just dressed and went back to the general hospitals in Japan. You would be surprised at the number of these wounds resulting from field pieces of from .30 and .31 calibre guns, but the innocence of the wounds under this "let alone treatment" was somewhat remarkable. I saw x-ray after x-ray taken with the bullet in and no bleeding. Of course, you may say the results were remarkable and they were, but let me ask you to give the surgeons of the armies on the field a great deal of credit. The war was fought as much by the surgeon as it was by the soldier. He was thoroughly organized to put his troops in the field ready for action. It was the order that when it was known that they were going into action every man should go to his quarters and change his under-clothes. This applied to the men in the navy. It was the order in the army that when they stopped, the men should take a bath. I think it was due to this remarkable cleanliness that they recovered. Just to give you an idea of the conditions, I will state that I counted fifteen gun-shot wounds in one man from his pelvis to his neck, eight wounds in front and seven behind. He was just eight days from the battle-field. It seems that he got his wounds in front while fighting and after he got down, everybody passing gave him a jab. I examined him and found him tender over the abdomen. I asked him what he was going to do and he said that he was going right back to the front,—that he wanted to "get even." The lacerations produced by this bullet are more even at a distance of 1,000 yards and if it is much beyond that the laceration becomes nil. When there was an injury to the blood vessel, there was a clean cut. When not badly shot or giving evidence of hemorrhage, they let the patient alone. The let alone treatment was the most remarkable thing I saw.

I do not know that I could improve any on what Dr. Dalton has suggested. I am a firm advocate of early operations when symptoms demand it. It is very interesting in the consideration of contused wounds of the abdomen to consider the shell injuries. In one vessel, the flag-ship, there were 640 men in active work at the guns during the fight in the Sea of Japan. It is astonishing to find out how many pieces of shell struck this flag-ship of Togo's and injured the men without serious laceration. They had a space on the main deck where the wounded were lying, and the pieces of shell were falling so thick that the hospital surgeon said that he simply had to rig up something. He said he did not know anything else to do so he took a number of large bamboo pieces and hung them around on the spaces on the main deck, in this space about 15 feet square. The shells or pieces of shells striking these bamboo pieces, seemed to render the patients immune from further injury. It was like shooting a bullet against a silk handkerchief. He gave a history of three cases of spent pieces of shell that struck the abdomen. In these three cases there

was hemorrhage. The hemorrhage was rather peculiar in that the painful hemorrhage occurred in two in which it was parietal peritoneal hemorrhage. It called back to my attention the fact that in two of my operations, which I did without an anesthetic, I found that the patient only suffered when I handled the parietal peritoneum posteriorly or anteriorly. My patients never said a word except when I came to touch the parietal peritoneum. The hemorrhage in these cases was not large, where the wound was from contusions. It is surprising how low the mortality was. All the dressing was done during the engagement. In cases of abdominal injury where the shock lasts over six hours, it is my idea to go into the abdomen whether there is pain or not. The experience I had in observing these cases in the Japanese hospitals has certainly been of value to me and I think we can all get valuable lessons from their work.

Dr. C. G. Geiger, of St. Joseph: The doctor gave us a very excellent paper and left very little unsaid. I think it was a step in the right direction and if the doctors in general would practice what he has advocated we would have fewer deaths from abdominal conditions or injuries to the viscera. However, he did not go quite far enough and make plain enough certain important points as to the handling and the technic. I agree with Dr. Dalton and Dr. Griffith that too much time should not be lost in awaiting favorable terminations. Where we have shock with pain lasting a short time, say a few hours, it means that the vital parts have been injured, and a clean and timely operation will not kill, even though we make a mistake and find no injury. It is a well known fact that rupture of the hollow viscera is a dangerous condition but rupture of the solid viscera is not so serious. The great danger of course, is from peritonitis. If we wait for peritonitis we have waited too long. If we are capable of making a reasonably accurate diagnosis we can also, to a large extent, locate the site of injury and make our opening to correspond with it so as to handle the parts and interfere with as small an area as possible. Another thing is the method of dealing with the injury. It is a common practice to wash out the entire cavity. I believe the less we handle or wash the parts the better. It is always a good plan to drain in such cases and to not close the abdomen tightly, and to place gauze into the wound and leave the patient in position to favor drainage. He spoke correctly so far as the Fowler position is concerned. If we had an entry in the upper part of the abdomen, I would deprecate the use of this position. I want to say again and to emphasize that it is my opinion that the less we handle and the less we interfere with these wounds, the better it is for our patients, unless we have an injury to the viscera.

Dr. O. B. Campbell, of St. Joseph: I think the paper is timely, and it impresses two essential points right forcibly. (1). That the diagnosis of the extent of injury done the viscera and blood vessels in injuries of the abdomen is often difficult. (2). The value of early operation in this class of cases. It is often possible in injuries of the abdomen to exclude hemorrhage, but it is often impossible to determine the amount of injury to the abdominal viscera. In cases where there is really doubt as to whether or not rupture has occurred in the intestine, after waiting a few hours for the subsidence of shock, an exploratory incision should be made. The report of Dr. Griffith's experience in Japan is quite interesting, but until a full report is obtained it will probably not influence surgical procedures in this class of cases.

When a ball penetrates the abdomen and there is evidence of shock and hemorrhage, the established practice is to open the abdomen and repair as much as possible the damage done and within as short a time after the reception of the injury as is possible. I take the position that in non-penetrat-

ing injuries to the abdomen it is often impossible to make a diagnosis of the extent of the probable injury to viscera. A case in point: In one of the packing houses of St. Joseph a laborer was struck just below the ensiform cartilage by a moving handcar. He was taken home and the family physician called. On the following day, twelve hours after the reception of the injury, I was called in consultation. His temperature was 100 degrees, pulse 100. His upper abdomen was considerably distended and he complained of severe pain on pressure. I advised an exploratory operation which was refused. He died at the end of ten days and post mortem examination showed gangrene of the transverse colon due to a thrombus in the mesenteric artery.

Dr. W. U. Kennedy, of St. Louis: There seem to be two propositions that demand consideration. The first is that all conditions of the abdomen should be regarded as serious until they have proven not serious. Second, the amount of traumatism inflicted upon the abdominal wall is not a guide to the amount of injury, or of the character of injury within the abdominal cavity. There is one symptom that I would point out. If they suffer with a practically continuous pain in the abdomen, associated with constant nausea and the symptoms become severe, we may come to the conclusion that some of the hollow organs have been injured. The pre-eminent symptom from the time of the injury is the constant nausea. In a case coming under observation where this condition prevailed a diagnosis of obstruction was made and when the abdomen was opened it was found that the adhesions covered practically all of the intestines. Another case was that of an old lady who slipped and struck the abdomen on the side of the wash-tub. Apparently she had suffered no ill therefrom. Some six or eight weeks thereafter she developed pain throughout the entire abdominal cavity and developed this nausea; the condition became so severe that a diagnosis of obstruction was made and confirmed by laparotomy. I want to emphasize this point particularly, that when following a blow or other injury to the abdomen, there later develops abdominal pain accompanied by constant nausea, an exploratory incision should be made.

Dr. Dalton, in closing: I want to state to Dr. Griffith that formerly I waited 24 hours, but I do not do that now. I operate at once. It is not every injury that requires a laparotomy. I hope my paper will do some good in showing the necessity of operating in all cases early, and not to wait until it is too late to save our patients. I am quite sure that even should a mistake be made (the abdomen opened and no visceral injury found) the mere operation will not lessen the patient's chances for recovery. On the other hand should we withhold an exploration when one is needed we will almost surely lose our patient. In other words, when in doubt, operate. By so doing you will save many more patients than by vacillation and procrastination.

THE COLLECTION OF HUMAN EMBRYOS IN THE ANATOMICAL LABORATORY OF THE UNIVERSITY OF MISSOURI.

BY C. M. JACKSON, M. D., COLUMBIA, MO.

During the past five years a systematic effort has been made in the Anatomical Laboratory of the University of Missouri to form a collection of human embryos and foetuses of all ages for purposes of scientific investigation. I desire to call the attention of the medical profession to this collection for two reasons.

In the first place, the use of the collection for embryological research is not limited to students in the University, but is open to any properly qualified investigator. Physicians, therefore, who desire embryological material for research work in normal or pathological embryology are welcome to use the collection. It is not even necessary, in all cases, to visit the University for this purpose; for, under certain restrictions, suitable specimens may be loaned to responsible persons for study.

In the second place, I desire to take this opportunity to thank the physicians who have so generously co-operated in forming this collection by donating the specimens at their disposal. Not every physician in active practice is able to engage in scientific investigation, but all may aid the progress of research work in human embryology by contributing the material which they, and they only, can furnish. It is hoped that in this way the collection will rapidly increase in size and value.

To those who may desire to add specimens to the collection, a few suggestions may be advisable as to the best methods of preservation. In general, it may be said that embryos and foetuses of the first four months should be placed, as soon as possible, in a 10 per cent. formalin solution (1 part of commercial formalin to 9 parts of water.) If the membranes are intact, they should be carefully punctured so as to allow the amniotic fluid to escape. In case formalin is not available, the strongest alcohol may be used. The specimens should be placed in a bottle or jar completely filled with the fluid. Foetuses of over four months may simply be wrapped in cotton or cloths wet with formalin or alcohol, then packed carefully in a wooden box, and shipped at once by express. Transportation charges will be paid gladly by the laboratory. *In all cases physicians are earnestly requested to send as full a clinical history as possible.* This will add materially to the value of the specimen.

For purposes of reference, a brief catalogue of the specimens now in the collection is given. More detailed information is contained in

the complete catalogue kept in the laboratory. It will be observed that the scope of the collection is somewhat wider than usual, the aim being to provide material for the study of all prenatal stages. Many of the later foetuses have been cut into gross sections, or specially dissected to illustrate developmental topography. Several of the earlier specimens, and a few of the later, have been embedded and cut into serial sections for microscopic study.

CATALOGUE OF THE COLLECTION.

The following abbreviations are used: ♂, male; ♀, female; tot., total length; CR., Crown-rump length; form., formalin preservation; alc., alcoholic; intravase., intravascular; topogr., topographic; thor., thoracic; abd., abdominal.

The source of each specimen is indicated by the name appended.

1. ♂ 48 cm. (tot). Intravasc. form. Sagittal sections (gross). Charite-Krankenhaus, Berlin.
3. ♂ 42 cm. (tot). Intravasc. form. Sagittal sections (gross). Charite-Krankenhaus, Berlin.
4. ♀ 38 cm. (tot). Intravasc. form. Sagittal and coronal sections (gross). Charite-Krankenhaus, Berlin.
5. ♂ 30 cm. (tot). Form. Sagittal sections (gross). Charite-Krankenhaus, Berlin.
6. ♀ 30 cm. (tot). Form. Sagittal sections (gross). Charite-Krankenhaus, Berlin.
7. ♀ 32 cm. (tot). Intravasc. form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
8. ♂ 32 cm. (tot). Intravasc. form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
9. ♂ 50 cm. (tot). Form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
10. ♂ 46 cm. (tot). Twin. Intravasc. form. Sagittal sections (gross). Charite-Krankenhaus, Berlin.
11. ♀ 40 cm. (tot). Intravasc. form.-alcohol. Sagittal sections (gross). Prof. W. Waldeyer, Berlin.
12. ♂ 53 cm. (tot). Lived 11 days. Intravasc. form. (stomach and intestines artificially distended). Sagittal sections (gross). Charite-Krankenhaus, Berlin.
13. ♀ 40 cm. (tot). Intravasc. form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
14. ♂ 47 cm. (tot). Intravasc. form. Topogr. dissection of thor. and abd. viscera. Charite-Krankenhaus, Berlin.
15. ♂ 26 cm. (tot). Intravasc. form. Sagittal sections (gross). Charite-Krankenhaus, Berlin.
16. ♂ 44 cm. (tot). Intravasc. carbolic-alc.-form. mixture. Topogr. dissection of abd. viscera. Prof. Olshausen's Frauenklinik, Berlin.
17. ♂ 52 cm. (tot). Intravasc. form. Topogr. dissection of abd. viscera. Prof. Olshausen's Frauenklinik, Berlin.
18. ♂ 33 cm. (tot). Twin to No. 19, umbilical cords and placenta intact. Intravasc. form. Charite-Krankenhaus, Berlin.
19. ♀ 33 cm. (tot). (see No. 18). Intravasc. form. Charite-Krankenhaus, Berlin.
20. ♂ 40 cm. (tot). Intravasc. form. Cross sections (gross). Prof. Olshausen's Frauenklinik, Berlin.
21. ♀ 48 cm. (tot). Intravasc. form. (stomach distended artificially). Topogr. dissection of abd. viscera. Prof. Olshausen's Frauenklinik, Berlin.

22. ♀ 36 cm. (tot). Intravasc. carbolic-alc.-glycerine mixture. Cross sections (gross). Charite-Krankenhaus, Berlin.
24. ♂ 28 cm. (tot). Form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
25. ♀ 30 cm. (tot). Form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
26. ♀ 22 cm. (tot). Intravasc. form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
27. ♂ 46 cm. (tot). Intravasc. form. (stomach artificially distended). Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
30. ♂ 19 cm. (tot). Form. Topogr. dissection of abd. viscera. Charite-Krankenhaus, Berlin.
32. ♂ 50 cm. (tot). Intravasc. form. Cross sections (gross). Dr. Thornton, Columbia, Mo.
33. ♀ 12 cm. (CR). Form. Topogr. dissection of central nervous system and abd. viscera. Dr. McAlester, Columbia, Mo.
34. ♂ 19 cm. (CR). Form. Topogr. dissection of abd. viscera. Dr. McAlester, Columbia, Mo.
35. ♂ 5.5 cm. (CR). Alc.-form. Topogr. dissection of abd. viscera. Dr. Graham, Columbia, Mo.
36. Viscera from No. 71. Form.
37. Viscera from No. 72. Form.
38. Kidneys, suprarenals and pelvic viscera from No. 75. Form.
39. ♀ 15 cm. (CR). Form. Topogr. dissection of abd. viscera.
40. ♂ 24 cm. (tot). Alc. Topogr. dissection of abd. viscera. Dr. McCallister, Centralia, Mo.
41. Abd. viscera from No. 74. Form.
42. Pelvic viscera from No. 76. Alc.-form.
43. Thor. and abd. viscera from No. 65. Alc.-form.
44. Thor. and abd. viscera from No. 70. Form.
46. ♂ 46 cm. (tot). Twin. Intravasc. form. Topogr. dissection of abd. viscera. Dr. Myer, Columbia, Mo.
47. ♀ 40 cm. (tot). Alc. Abd. viscera dissected.
48. ♂ 42 cm. (tot). Intravasc. form. Coronal sections (gross).
49. 2.8 cm. (CR). Alc.-form. Sagittal sections (gross).
51. 3.5 cm. (CR). Form. (?) Paraffin sections, Dr. Milnes, Milan, Mo.
52. 5 cm. (CR). Sagittal sections (gross). Dr. Smiley, Tyler, Texas.
53. ♂ 8.5 cm. (CR). Form. Dr. Albright, Anaconda, Mont.
54. ♀ 15 cm. (CR). Form. (?) Celloidin sections, cross. Dr. Perry, Columbia, Mo.
55. ♂ 6.5 cm. (CR). Form. (?) Paraffin sections, cross, 50 micra. Dr. Hume, Columbia, Mo.
56. 2.4 cm. (CR). Alc. Paraffin sections, cross, 20 micra. Dr. Scholz, St. Louis.
57. 3.1 cm. (CR). Form. Paraffin sections, cross, 20 micra. Dr. Graham, Columbia, Mo.
58. 1.7 cm. (CR). Form. Paraffin sections, cross, 20 micra. Dr. Douglass, Columbia, Mo.
59. 1.1 cm. (CR). Pathological. Alc. Dr. Scholz, St. Louis.
60. 1.1 cm. (CR). Alc. Paraffin sections, cross, 20 micra. Dr. Lewis, Columbia, Mo.
62. 2.7 cm. (CR). Form. Midsagittal section (gross). Dr. Thornton, Columbia, Mo.
63. Abd. viscera, from No. 69. Form.
64. ♂ 26 cm. (tot). Alc. Dr. McCallister, Centralia, Mo.

65. ♂ 12 cm. (tot). Alc. Cleared by Schultze's method. Dr. Scholz, St. Louis.
66. ♀ 18 cm. (tot). Alc. Cleared by Schultze's method.
67. 5 cm. (CR). Alc. Cleared by Schultze's method. Dr. Milnes, Milan, Missouri.
68. 5.5 cm. (CR). Alc. Cleared by Schultze's method.
69. 5 cm. (CR). Alc. Cleared by Schultze's method. Dr. Brunner, Carrollton, Mo.
70. 2 cm. (CR). Alc. Cleared by Schultze's method. Dr. Crandall, Birchtree, Mo.
71. 2.5 cm. (CR). Alc. Cleared by Schultze's method. Dr. Scholz, St. Louis.
72. 2 cm. (CR). Alc. Cleared by Schultze's method. Dr. Tichenor, Chicago.
73. 6 cm. (CR). Alc. Cleared by Schultze's method. Dr. Allee, Olean, Missouri.
74. ♂ 16 cm. (tot). Alc. Cleared by Schultze's method. Dr. Brunner, Carrollton, Mo.
75. ♀ 20 cm. (CR). Alc. Cleared by Schultze's method.
76. ♀ 20 cm. (tot). Alc. Cleared by Schultze's method.
77. ♂ 12 cm. (CR). Form. Topogr. Dissection of abd. viscera. Dr. Perry, Columbia, Mo.
78. ♂ 15 cm. (CR). Alc.-form. Topogr. dissection of thor. and abd. viscera. Dr. Mikel, Columbia, Mo.
79. ♂ 15 cm. (CR). Semi-papyraceous twin. Alc. Dr. Sheley, Independence, Mo.
80. ♂ 20 cm. (CR). Cranioschisis. Alc. Cross sections (gross) of trunk. Dr. Norris, Columbia, Mo.
83. ♀ 20 cm. (CR). Cranioschisis. Alc.
84. ♀ 42 cm. (tot). Lived 5 days. Intravasc. form. Dr. Crawford, Mexico, Mo.
85. ♀ 32 cm. (CR). Cranioschisis, harelip, polydactilism, talipes, etc. Intravasc. form. Dr. Carryer, Columbia, Mo.
86. ♀ 32 cm. (tot). Triplet (with No. 87 and 88). Form. Dr. Munday, New York City.
87. ♂ 33 cm. (tot). (see No. 86). Dr. Munday, New York City.
88. ♀ 32 cm. (tot). (see No. 86). Dr. Munday, New York City.
89. ♀ 20 cm. (CR). Umbilical cord and placenta intact. Form.
90. ♀ 27 cm. (tot). Alc.
91. ♀ 18 cm. (CR). Craniorachschisis. Alc. Dr. Sheley, Independence, Mo.
92. ♂ 18 cm. (CR). Form.
93. ♂ 16 cm. (CR). Umbilical cord and placenta intact. Form.
94. ♀ 14 cm. (CR). Alc. Hardened *in situ* in intact membranes. Dr. Scholz, St. Louis.
95. 1.8 cm. (CR). Form. Pathological. Dr. Thornton, Columbia, Mo.
96. 2.7 cm. (CR). Cranioschisis, in intact membranes. Form. (?)
97. 1.4 cm. (CR). Alc.-form. Pathological. Paraffin sections, cross, 20 micra. Dr. Lewis, Columbia, Mo.
98. 1.8 cm. (CR). Alc.-form. Paraffin sections, coronal, 20 micra. Dr. Douglass, Columbia, Missouri.
99. 2.6 cm. (CR). Alc.-form. Paraffin sections, Dr. Graham, Columbia, Mo.
100. Pathological, flattened and rudimentary. Dr. Baskett, Mexico, Mo.
101. 2.5 cm. (CR). Pathological. Form., Dr. Wm. Shaefer, Columbia, Mo.
102. 1.2 mm. (CR). Alc. Ovum intact, 8x15 mm. Embryo sectioned, but in very poor condition. Dr. Campbell, Syracuse, N. Y.
103. 4 cm. (CR). Dr. Kaps, Winfred, South Dakota.

104. ♀ 24 cm. (CR). Hydrocephalus. Form. Dr. Cave, Mexico, Mo.
105. ♀ 11.5 cm. (CR). Form. Dr. Stowers, Columbia, Mo.
106. ♂ 40 cm. (tot). Intravase. form. Embedding in celloidin for sectioning. Dr. Taylor, Columbia, Mo.
107. ♀ 5 cm. (CR). Form. Pathological. Dr. Norris, Columbia, Mo.
108. 3 cm. (CR). Zenker's fluid. Paraffin sections, cross, 10 micra. Dr. Norris, Columbia, Mo.
109. 3.5 cm. (CR). Damaged. Zenker's fluid. Viscera embedded in paraffin. Dr. Myer, Columbia, Mo.
110. ♀ 11 cm. (CR). Membranes intact. Form. Dr. Stowers, Columbia, Missouri.
111. ♂ 4.5 cm. (CR). Alc. Dr. Aber, Montserrat, Mo.
112. ♂ 10 cm. (CR). Alc. Dr. Flynt, Molino, Mo.
113. ♀ 10 cm. (CR). Alc. Dr. Flynt, Molino, Mo.
114. Pathological. Body rudimentary. Dr. Stanley, Laclede, Mo.
115. ♂ 4.7 cm. (CR). Form. Paraffin sections. Dr. Auler, St. Louis.
116. ♂ 4.5 cm. (CR). Alc. Damaged. Dr. H. B. Cole, Sedalia, Mo.
117. ♀ 12 cm. (CR). Alc. Dr. H. B. Cole, Sedalia, Mo.
118. ♂ 12 cm. (CR). Form. Dr. H. B. Cole, Sedalia, Mo.
119. Membranes intact, 3 cm. in length, enclosing a rudimentary "mole." Dr. McNutt, Monroe City, Mo.
120. ♀ 5.5 cm. (CR). Alc. Dr. Peak, Springfield, Mo.
121. ♂ 4.6 cm. (CR). Paraffin sections. Dr. Herndon, Camden Point, Mo.
122. 3.9 cm. (CR). Paraffin sections. Dr. Herndon, Camden Point, Mo.
123. ♂ 6.8 cm. (CR). Form. Dr. Goshwiller, Novinger, Mo.
124. 1 cm. (CR). Form. Damaged. Dr. Hauck, St. Louis.
125. An early ovum, disk-shaped, 5x10 mm., covered with villi except at one pole. Unopened. Alc. Dr. Scholz, St. Louis, Mo.
126. 1 cm. (CR). Damaged. Alc. Dr. Scholz, St. Louis.
127. 3 cm. (CR). Damaged. Alc. Dr. Scholz, St. Louis.
128. ♀ 7.5 cm. (CR). Alc. Dr. Scholz, St. Louis.
129. ♂ 8.5 cm. (CR). Alc. Dr. Scholz, St. Louis.
130. ♀ 9.5 cm. (CR). Alc. Dr. Scholz, St. Louis.
131. ♀ 7 cm. (CR). Form. Drs. Blesch and Reed, Guthrie, Okla.
132. Tubal pregnancy. Early ovum protruding from ruptured tube. Alc. form. Dr. Myer, Columbia, Mo.
133. 1.6 cm. (CR). Form. Paraffin sections sagittal, 20 micra. Dr. Pond, Webster City, Iowa.
134. 1.2 cm. (CR). Form. Paraffin sections, cross, 20 micra, series incomplete. Dr. Clark, Pittsburg, Pa.
135. 1.3 cm. (CR). Form. Dr. Reed, Guthrie, Okla.
136. ♂ 7.7 cm. (CR). Twin to No. 137. Form. Embedding in celloidin. Dr. Reed, Guthrie, Okla.
137. ♂ 8.8 cm. (CR). Twin to No. 136. Form. Dr. Reed, Guthrie, Okla.
138. 1 cm. (CR). Damaged. Form. Dr. Musson, Norborne, Mo.
139. ♀ 33 cm. (tot). Twin to No. 140. Form. Topogr. dissection of thor. and abd. viscera. Dr. Boucher, Marshalltown, Ia.
140. ♀ 33 cm. (tot). Twin to No. 139. Form. Dr. Boucher, Marshalltown, Iowa.
141. Rudimentary embryo. in membranes. 2nd. month. Dr. Boucher, Marshalltown, Ia.
142. 1.5 cm. (CR). Damaged. Form. Dr. Boucher, Marshalltown, Ia.
143. ♂ 12 cm. (CR). Embedding in celloidin. Form. Dr. Dunnivant, Kirkwood, Mo.
144. 1.6 cm. (CR). Alc. Dr. Hill, Eldorado Springs, Mo.

145. ♂ 23 cm. (CR). Form. Dr. Boucher, Marshalltown, Ia.
146. 1.8 cm. (CR). Alc. Dr. Tapscott, Mt. Pisgah, Ark.
147. 2.3 cm. (CR). Alc. Paraffin sections. Dr. Ryland, Lexington, Mo.
148. ♂ 6.5 cm. (CR). Form. Dr. Ryland, Lexington, Mo.
149. 1.2 cm. (CR). Tubal pregnancy, ruptured tube enclosing damaged embryo. Alc.-form. Dr. H. B. Cole, Sedalia, Mo.
150. ♀ Newborn, badly preserved. Dr. Corbin, Bloomfield, Mo.
151. ♂ 18 cm. (CR). Form. Dr. Brunner, Carrollton, Mo.
152. ♂ 11 cm. (CR). Twin to No. 153. Form. Placenta and membranes intact. Dr. Eyermann, St. Louis.
153. ♂ 11 cm. (CR). Form. (See No. 153). Dr. Eyermann, St. Louis.
154. ♀ 16 cm. (CR). Alc. Placenta and cord intact. Dr. Woodside, Johnston, Ill.
155. ♂ 13 cm. (CR). Alc.-form. Twin to No. 156. Dr. Allee, Lamar, Mo.
156. ♀ 13 cm. (CR). Alc.-form. (See No. 155). Dr. Allee, Lamar, Mo.
157. 3.5 cm. (CR). Alc. Damaged. Dr. Allee, Lamar, Mo.
158. 3.5 cm. (CR). Alc. Dr. McGaugh, Richmond, Mo.
159. 3 cm. (CR). Alc. Dr. McGaugh, Richmond, Mo.
160. 2 cm. (CR). Alc. Dr. McGaugh, Richmond, Mo.
161. Rudimentary embryo, pathological. Form. Dr. Eyermann, St. Louis.
162. ♂ 12 cm. (CR). Form. Dr. McGaugh, Richmond, Mo.
163. ♂ 6 cm. (CR). Form. Dr. McGaugh, Richmond, Mo.
164. ♀ 20 cm. (CR). Intravasc. form. Dissection of abd. viscera. Dr. Simison, Columbia, Mo.
165. 4.5 cm. (CR). Bichloride-alc. Dr. Bell, Columbia, Mo.
166. 0.5 cm. (CR). Form. Pathological. Dr. Crow, St. Louis.
167. ♂ 12 cm. (CR). Form. Damaged. Dr. Woodside, Johnston City, Ill.
168. 3.5 cm. (CR). Form. Dr. Phillips, Columbia, Mo.
169. ♀ 7.5 cm. (CR). Form. Placenta and membranes intact. Pathological. Dr. Stowers, Columbia, Mo.
170. 2.7 cm. (CR). Form. Damaged. Dr. Eyermann, St. Louis.
171. ♂ 21 cm. (CR). Form. Placenta and membranes intact. Knot in umbilical cord. Dr. Eyermann, St. Louis.
172. ♂ 18 cm. (CR). Form. Placenta and umbilical cord intact. Dr. Riggs, Virginia, Minn.
173. ♀ 11 cm. (CR). Form. Semi-papyraceous. Dr. Crawford, Eldorado Springs, Mo.

Although the number of specimens in the collection is at present too small for conclusive results from the statistical standpoint, the following table showing the distribution according to age and sex is at least interesting and suggestive. The age has been calculated by the aid of Mall's rule, which is as follows: For embryos less than 100 mm. long (crown-rump length), the age in days equals the square root of 100 times the length in mm. For specimens of from 100 mm. to 200 mm. crown-rump length, the length in mm. equals the age in days. For later foetuses, Hasse's well known rule was used. The sex is indicated only in specimens in which it could be determined by inspection of the external genitals.

DISTRIBUTION ACCORDING TO AGE AND SEX.

Lunar Month	Male	Female	Undetermined	Total
I	—	—	4	4
II	—	—	37	37
III	9	3	13	25
IV	6	6	—	12
V	9	5	—	14
VI	4	5	—	9
VII	8	4	—	12
VIII	7	13	—	20
IX	5	5	—	10
X	9	3	—	12
Grand total	57	44	54	155

Before considering the age of the specimens, it should be stated that they (with the exception of the 26 Berlin specimens) were obtained from the private practice of a number of physicians who have, as a rule, sent me all the specimens at their disposal. A collection made in this way would necessarily be relatively deficient in very early embryos, which often escape attention, and in the later foetuses, which the parents often refuse to surrender. The deficiency in the later stages is supplemented by the specimens collected in Berlin, which make up 26 of the 63 foetuses of the last five lunar months, and which include no earlier stages. As to the first month, it can only be said that abortions of this period would perhaps be most numerous of all, if they could be accurately determined.

Bearing in mind these limitations, we may observe that the table indicates a maximum number of abortions in the second lunar month. This does not agree with the statement often met in the textbooks that abortions are most numerous in the third month. Following the second month, the table indicates a decline, with apparently a second increase about the eighth month.

As to sex, it is already well known that the males predominate, not only in living births (the males exceeding the females by about 6 per cent.), but also in still-births. According to Abbott (article "Vital Statistics" in Buck's Reference Handbook of the Medical Sciences, New York, 1904): "The deaths of still-born males are usually from 25 per cent to 50 per cent. greater in number than those of females. In the 40 years 1856-1895, there were registered in Massachusetts 31,656 male still-born children, and 21,202 females of the same class."

Cazeau and Tarnier (Theory and Practice of Obstetrics. Am. Ed. Phil. 1893) make the following statement: "Morgagni and Desormeau supposed that abortions of foetuses belonging to the female sex are more numerous than of males, and I do not know whether the vulgar opinion opposed to this is true or false; but certain it is that at term

the boys exceed the girls in the proportion of sixteen to fifteen, which would seem to prove that female abortions are the most numerous."

This idea that females must be more numerous in the earlier abortions because the males preponderate later evidently rests upon the assumption that at the beginning the sexes are equal in number. So far as I know, however there is no evidence to support this view. On the contrary, the table above indicates that the preponderance of males is still evident in abortions as far back as the third month. It would be interesting to know whether this preponderance of males continues back to the time when the sexes are first distinguishable by microscopic examination, but my observations on this point are as yet too few to be worthy of mention. Incidentally it may be noted that the results of the latest investigations seem to indicate that sex is determined at the time of fertilization of the ovum.

As shown in the foregoing table, of the 101 specimens in which the sex could be determined by external examination, 57 are males, and 44 females. This shows a male preponderance of about 30 per cent., which is within the limits of Abbott's figures.

Finally, it may be noted that the collection includes one set of triplets, five pairs of twins, and three twins whose mates survived. The significance of these figures is apparent when it is remembered that of living births twins occur, on the average, only once in a hundred cases, and triplets only once in a thousand. While it is not likely that this large proportion of twins and triplets would be maintained in a larger collection, still it seems unquestionable that the percentage is much larger in abortions and still-births than in living births.

NON-LITHOGENOUS OBSTRUCTION OF BILIARY DUCTS.

BY A. H. CORDIER, M. D., KANSAS CITY, MO.

A few years ago the appendix was the focal center of discussion. This subject was discussed by the most noted surgeons and physicians of the world, and the literature on appendicitis and its management would make a library of many volumes.

The usual phases of appendicitis were thus made recognizable, and an almost unity of opinion as to the proper treatment of this disease was thus brought about. Later, the trend of investigation has been centered in the biliary tract, and the progress here has been equally noticeable. For years, gall-stones were the only condition that received much attention from the pathologist and surgeon; stones in the gall-bladder and common duct were looked upon as the cause of most of the later, then recognized, diseases of the biliary tract. Further clinical study, operative and post-mortem findings have demonstrated beyond doubt that these foreign bodies (stones), when such exist, are the result of a pre-existing disease of the ducts and gall-bladder, and

that in the great majority of instances this disease was of bacterial (inflammatory) origin. It was claimed that those of sedentary habits, and insane patients, were especially prone to the formation of gall-stones and that at post-mortems a large number of gall-stones were often found in patients who had died of other diseases, and who, during life, had not had any symptoms of gall-stones. This later statement is used by some, even to-day as an argument against the surgical management of these cases.

Our text-books, up to within a very short length of time, have been mis-leading, both in the interpretation of manifested symptoms, in the manner of detecting by examination, evidences of diseases in the biliary tract, and in the recommending the proper management of these when diagnosed.

It was advised that an operation on these ducts or gall-bladder be not performed, unless: 1. Jaundice was severe and persistent. 2. Colic lasting and of frequent recurrence. 3. Evidence of an abscess in gall-bladder. All very late manifestations of biliary tract disease.

Gall-stones do not form in a few days; they are late manifestations of a pre-existing disease. The gall-stone cases we are all familiar with when they present the typical history. It is the unusual features of the pathology in this locality that we are endeavoring to solve and remedy at this time.

There is a large class of cases coming under the general head of Non-lithogenous obstruction of biliary passages of which we are not so familiar, and to this variety I desire to call attention in this paper.

A stricture of the common duct may have its origin in the long incarceration of a stone, the stone later passing into the duodenum or ulcerating into the bowel. In that event, no stone would be found at the time of operating. Numerous instances of this kind have been reported. This class of cases would be hard to understand at the time of operating, unless a carefully gotten clinical history was obtained; such a case I report in number 1.

CASE 1. Mr. W., aged 55. Three years ago this gentleman had several very severe attacks of gall-stone colic, followed by jaundice. The last attack of colic being followed by a persistent jaundice: No stones could be discovered in the faeces for weeks following the attacks. Two years ago after an attack of "fever," accompanied by severe tenderness in region of pylorus, he passed a large gall-stone. His symptoms got better, and his jaundice, in part, disappeared for a few weeks, then reappearing as severe as before the stone passed.

When I first saw him he was almost a chocolate color, the jaundice was so intense. A large pyriform fluctuation enlargement was easily discernible in the region of gall-bladder.

Operations revealed a gall-bladder that held four pints of bile and mucous. A careful search for a stone failed to find one. Just

where the common duct passed behind the duodenum was an indurated mass that was evidently the site where the large stone had ulcerated into the duodenum, and in healing had formed a complete stricture of the duct at this point. The duct was very much dilated above this point. An anastomosis was made between the gall-bladder and the jejunum. His symptoms have all disappeared, and three years later he reported himself entirely well.

The stricture in those cases following an injury to duct from an impacted stone are usually more defined to the examining finger owing to the dense adhesions resulting from the inflammation changes surrounding the duct.

The cystic duct stricture may form from the same causes that produce obstruction in the common duct; in fact, there exist much more favorable conditions for the formation of a stricture here than elsewhere in the biliary passage; there exist more dense surrounding strictures to become inflamed and thus compress the duct; there is no constant flow of an aseptic (bile) fluid to clear the canal of any bacterial invasion from the intestine, or to wash away any sedimentary nucleus that only too often acts as a destructive agent to the protective epithelium of the mucous membrane, thus permitting bacterial invasion to the deeper layers of the tract. An obstruction, when once started in cystic duct, will, in all probability, continue to form until the canal is obliterated. Thus we have the gall-bladder with its natural function cut out from the bile circuit and its cavity filled with the product of its own manufacture or that due to the presence of infectious bacteria, thus converting this sac, that naturally has a daily interchange of its contents with healthy bile, into one with no outlet. The progress is either one of a cholecystitis obliterans with the destruction of the mucous membrane and hyperplastic thickening of the viscus wall or the gall-bladder becomes a retention cyst, dilating to an enormous size in some instances, as in one of my cases the gall-bladder held three or more pints of a sero-sanguinolent fluid. In the obstruction of the cystic duct at its time of operating one of the four methods of dealing with the conditions is resorted to. If the obstruction is one of recent date, and due to a purely inflammatory (acute) process, the opening of the gall-bladder after stitching it in the parietal incision, followed by drainage, may be all that is necessary, as with the subsidence of the acute process the canal becomes pervious, as bile will begin to flow freely from the established fistula when this end has been attained.

Drainage of the gall-bladder externally will become less and less a procedure resorted to as we appreciate more that the gall-bladder, like the appendix, when full of strictures, is best taken care of in a specimen bottle filled with a good preservative.

In the chronic cases, when the gall-bladder is a mass of scar-tissue,

contracted, thickened, and obstructed, a cholecystectomy should be performed.

A third method, and one that usually brings results that are all that could be desired, is by making an anastomosis between the gall-bladder and some part of the intestinal canal, the jejunum being the preferable site.

A class of patients will be met with occasionally who are in a desperate physical condition, and in no shape to stand a prolonged surgical procedure, in whom, at time of operating, an enlarged gall-bladder is found surrounded by firm vascular adhesions, and in whom no stone can be found by palpation in common duct, yet, that canal is obstructed; in such cases a cholecystectomy would be the proper procedure.

In making the anastomosis, I believe that the Murphy button gives the largest opening, the most permanent and satisfactory results.

This operation, in properly selected cases, is to be preferred to all other methods of relieving the individual of his burden of taking care of the bile in his blood. Many cases of narrowed pylorus and dilation of the stomach have their origin in adhesions surrounding biliary ducts, and are relieved by a proper separation of the adhesions and removal of the cause of the adhesions.

There are a class of cases presenting an obscure train of symptoms pointing to the vicinity of gall-bladder and biliary ducts as their source; as, a vague sense of uneasiness, occasionally painful spells lasting a few minutes with attacks of indigestion and painful flatulency. At the operation no stones are found, no stricture of duct is discovered, no visible change in gall-bladder is discernible, in fact, nothing is detected except a few adhesions between cystic duct and common duct or duodenum. A separation of these adhesions, with a liberation of the bound-down ducts and viscus from the constantly nagging, distended stomach and intestines, will, as a rule, bring relief to the patient.

The all-important question of early diagnosis is ever present in all pathologic processes. A diagnosis in the early history of most surgical cases would rob those cases of their later destructive process to the organ affected and ward off damage to remote organs. A simple process by time and complication becomes one of danger, and much more difficult to deal with surgically. Add to a delayed diagnosis, professional tardiness in recommending the proper method of relief, and the opposition of the patient to accept the preferred relief, and we have all that is necessary for the development of serious complications. It makes the surgery difficult, attended by a too high mortality, and a failure often to relieve symptoms and a protracted convalescence. I report this unusual case of non-lithogenous obstruction of common duct to illustrate the remote and irreparable damage to other organs—the spleen and the liver.

Case 2. Mr. R., aged 21. At the age of three years this young man's parents noticed that he was jaundiced, and even before that time the attacks of pains, very severe in character and of long duration. These attacks of "colic" so-called, continued to recur at irregular intervals, to be followed by an increase in the jaundice. The skin has never cleared entirely since the beginning of his attacks. The stools have at times been acholic but as a rule, there has been evidence of some bile in the faeces.

When I first saw him, I found him jaundiced, poorly nourished, careworn and exhausted. Pulse 58, temperature 97.50, poor appetite, inability to digest much fatty food, stools only faintly bile-stained, urine specific gravity 103, loaded with bile.

Examination.—Abdomen enlarged on left side, dullness over area from rib order to ileum. No tenderness on firm pressure at any point. Nothing abnormal in liver or gall-bladder region could be detected on palpation or percussion. No fluid in peritoneal cavity.

Diagnosis.—Common-duct obstruction, probably congenital or cicatricial enlarged spleen, as a result of circulatory interference in cicatricial enlarged spleen, as a result of circulatory interference in liver.

Operation.—Usual parietal incision for a common duct operation. Tissues, when cut, look like a carrot. Bled very freely from smallest of vessels; spleen enlarged, not nodulated. Gall-bladder thickened and only slightly enlarged. No stones in gall-bladder or in any of the hepatic or common ducts. Just where the common duct passed under the first portion of the duodenum the duct was as hard as a tendon, and appeared to be in very much the same pathologic condition that is found in appendicitis obliterans (cholangitis obliterans). The gall-bladder was opened and explored carefully with probe to establish the patency of cystic duct. Anastomosis was made by the aid of Murphy button with upper portion of the jejunum.

His recovery was the usual one of a successful abdominal section. The stools soon became bile-stained, his skin began clearing at the end of three days, and at the end of five weeks was quite clear for a skin that had been bile stained for eighteen years.

His appetite for fats developed soon, and his weight increased rapidly. His attack of pain disappeared. I heard from him this week, one year after operation, and he weighs 160 pounds and is feeling fine. The button in this case passed on the seventeenth day after the operation.

This case is of much interest because of the character of the pathology, duration of the same, and the rapid restoration of the patient's health. The changes in the liver and spleen produced by long-continued duct obstruction, I am afraid, are of such a character that a permanent and satisfactory cure will not be obtained in this case.

Traumatism in the vicinity of the ducts may lead to a stricture of the duct, as the following case illustrates:

Mr. ———, aged 55, some few years ago, received a kick over the liver, this led to a severe attack of localized peritonitis. His symptomatic recovery was tardy. One year ago he began having pain in the region of gall-ducts, and soon a jaundice developed, that has persisted up to the time I first saw him. An operation revealed extensive adhesions and the canal of the common duct obliterated for an inch and a half. An anastomosis was made between the gall bladder and the jejunum, his pain, jaundice and other symptoms disappearing from that time to the present; two years later.

Case 3. Mrs. T. Aged 45. This lady for two or three years, has had severe digestive disturbances. For last six months she has had repeated attacks of uneasiness and tenderness in region of head of pancreas, and during this time she has developed an ascities and a continuous jaundice with much loss of weight. In fact, the history is one of a malignance in the pylorus or head of the pancreas. An operation revealed a distended gall-bladder and dilated common duct; the head of pancreas was much enlarged and hardened; there were no stones to be found. The pancreatic enlargement had completely closed the duodenal opening of the common duct.

A cholecysenterostomy was performed; the symptoms disappeared and up to this time, one year later, have not recurred.

This was a case of chronic pancreatitis which involved the ductal opening into the duodenum.

I recall another case in which there had been a local peritonitis involving the common duct, the adhesions bending the duct to such an extent that a recurring jaundice extending over a period of years was a feature of the case; more or less pain being present all the time. This case was completely relieved by breaking up the adhesions and straightening the ducts.

The cancerous invasion of the duct in this location are frequently due to some unrecognized benign pathology that has persisted for years, the late manifestations simulating very closely lithogenous obstruction, a diagnostic feature of cancer being a gradual and continuous jaundice when once established, differing in this respect from the ball valve stone action in common duct.

One source of a transient jaundice that may lead to a diagnosis of lithogenous obstruction is a displaced right kidney the pedicle of which in its abnormal position, may elbow the common duct and produce a jaundice.

The symptoms of this condition are not sufficiently typical in all cases to warrant a diagnosis of the exact character of the pathology causing the obstruction. However, the presence of an imprisoned gall-stone in the duct is usually accompanied by sufficient symptoms to in-

dicate its presence, and the discovery of a misplaced kidney will point to the probable source of the icterus.

A patient, having escaped the acute septic process of an invasion of the colon bacillus into the deeper structures of the common duct and gall-bladder, may at a later period develop symptoms due to the later mechanical effects of this inflammatory process, either in the form of a stricture of common duct, or if the process has run a chronic course, there may be a cholangitis obliterans, thus closing the duct. I have seen two or three such cases. Drainage of the gall-bladder into the jejunum has relieved the all.

As we learn more of the pathology located so frequently in the duodenum, we are better able to understand some of the obscure symptoms pointing to that locality as their source. Ulcers in the duodenum located near the entrance of the common duct, in their healing process may include this opening in the cicatrix and produce a closure of the duct and thus produce the usual train of symptoms that accompany the closure of the duct from any cause.

Of much value is the clinical history in these cases, as the symptoms and history are somewhat at variance with that of a stone-obstructed bile duct.

Appendicitis obliterans has long been recognized, but the same pathology in the common bile-duct is a comparatively recent acquisition to our knowledge in this locality. I have seen a few such cases where, at the time of the operation, the duct rolled under the finger like a tendon, so completely was the normal structures destroyed by the chronic cholangitis.

If the obliterative process is confined to the common duct, which is rare, there will be present a persistent jaundice the intensity of which will depend on the completeness of the obliteration. With the jaundice will be the usual train of adhesive symptoms in this locality, as gaseous distension of the colon, interference with stomach and intestinal digestion, painful peristalsis, etc.

If the obstruction is located in the cystic duct, and the gall-bladder escapes the usual contraction, due to the presence of a cholecystitis this viscera may continue to manufacture mucus and if infected (as it usually is) a muco-purulent distention takes place, and a pyriform retention cyst is produced, usually detectable below the border of the liver in these emaciated patients. In this condition, jaundice is absent, and the patient will have fever, stomach and intestinal disturbances. These cases are especially liable to recurring attacks of fever, as the absence of bile in the gall-bladder robs nature of one of the most efficient inhibiting bactericidal fluids. These are fit cases for a cholecystectomy, as drainage of the gall-bladder is too uncertain in its curative effects, the opening either refusing to close, or if it does, close, the symptoms are renewed.

Stricture is invariably the late manifestations of some previous pathology, as a healed ulcer, or from stone pressure. These strictures may be complete or partial, extending for only a few lines to an inch or more along duct. The symptoms varying according to the situation of the obstruction and condition of the adjoining structure and organs.

The growth leading to an obstruction of the bile-ducts are of the same character as those found in other parts of the abdomen, the malignant neoplasms predominating, and giving rise to a train of symptoms hard to diagnose, early, from a ball-valve stone in the common duct; a characteristic feature of the jaundice produced by a malignant growth being, when once well established, intense and persistent, the patient showing more severe and early constitutional effects in the malignant cases.

Where the complete obstruction of the duct is the outcome of a long impacted stone resulting in a cancer the diagnosis of the latter is extremely difficult prior to operation.

Cancerous obstruction occurs most frequently in the lower portion of the common duct, the location of most lithogenous obstructions, also.

In determining the existence of an obstruction, its location, extent, and character at time of operating, I have for fourteen years resorted to hydrostatic pressure, by introducing through an aspirating needle into the gall-bladder a saline solution from a moderate height, or if this viscus has been opened, the nozzle of an irrigating-syringe, or if the common duct has been opened, by irrigating directly into the duct.

In cases where the duct is imbedded in a mass of adhesions and has lost its identity, it can be made to stand out distinctly by water-pressure introduced through gall-bladders, provided the cystic duct is patent; by this same process the patency of the duct, after removal of one or more stones, can be determined, as I have on several occasions run rather a large quantity of saline directly into duodenum through gall-bladder, cystic and common duct. As a means of determining the security of the duct stitching where the opening in this canal is closed by suture, this method is invaluable, disappearing stones and other debris can thus be washed out of the biliary tract. I am sure if this simple, safe, and efficient procedure were carried out more frequently, there would not be so many post-operative biliary fistula or failures to remove the obstruction nor would so many secondary operations be required.

THE PHYSICIAN AND THE ASSOCIATION AS SEEN BY
THE COUNTRY DOCTOR.*

BY J. B. NORMAN, M. D., CALIFORNIA, MO.

My subject today partakes of the economic and the ethic rather than of the scientific. I have no apology to offer for its selection, more than to say that in my opinion, we devote too little time to the discussion of our professional duties, and the relation that ought to obtain between members of a great profession. Medical organization has been the central theme in almost every meeting of medical men in this state for the past five years. It is pleasant indeed to contemplate the union of the medical profession of this state into a compact organization with purposes and powers for good. Such an organization I believe to be possible, the nucleus of such an one we now have, and if it ever attains that state of perfection which we hope, it must be by the individual efforts of all of its members. The organization of the profession into one body, without distinction as to scientific attainments, stability of character or ethics of practice, would form a cosmopolitan mass of conflicting interests and diversity of opinions wholly incapable of harmonious union. The gentlemanly physician of the old school, as depicted, by Ian Maclaren, and the blatant quack of modern times, who preys upon human suffering and pauperizes widows and orphans, are the extremes between which are many degrees of manhood and many varieties of medical vampires. We must needs draw the line between those who may and those who may not be admitted to our organization, and the distinction between the poorest of the one and the best of the other is so slight as to be almost imaginary. The county society is the basic unit of the organization, and upon it devolves the duty of passing upon the eligibility of applicants for membership, and of applying disciplinary power to those who, once within the pale of the society, so far transgress the laws of genteel manhood, as to place themselves outside the line of demarcation prescribed. I may go farther and say, that each and every member of the society, in his individual life, by precept and by example, by daily self-examination and mode of practice, should strive to raise the boundary line of ethics to such a plane as must be seen by every intelligent layman. I do not mean to encourage the making of complaints against others, but rather let each look for reasons why he may complain against himself. I have not advertised my cures in the lay press, but what have I said to that man or that woman, that led him or her to believe in my superior ability, and to discount the professional skill of all my competitors? Was it strictly true? Was

*Read before the Moniteau County Medical Society at Latham, Mo., October 31, 1906.

it ethical? Was it manly? Was that last case as bad as I represented? Was the cure as marvelous as I led them to believe? Have I fostered ignorant superstitions and traditions to conceal my own ignorance or to enhance the greatness of my cures? Have I pretended to do more with my instruments and appliances than I know can be done? Have I given my name or my influence to push the sale of any nostrum? Have I claimed, or have I permitted others to claim for me, special knowledge of a remedy not generally known to other physicians? Have I taken a patient from a competitor? Have I by word or deed, voluntarily or otherwise, discredited the diagnosis, treatment or professional skill of any reputable physician? Have I bid for the business of my competitors by making lower charges, or by offering to make lower charges than they? These are the things wherein we sometimes fail. Brother, are you guilty? Stand up and be counted.

This human weakness is an individual quality of the man and he alone is responsible for its cultivation and maintainance. While the secret practice of any or all of these things may not immediately banish us from our society, it will serve in time to alienate our competitors and lose for us the good will and esteem of all reputable physicians. The physician who looks upon his professional training as merely an asset to his commercial value is unworthy the confidence of a human being. In the light of this statement, it seems strange that physicians will continue to be gulled by a certain journal, published in our own state, whose chief object of existence is to promote the sale of the various proprietary preparations and nostrums in which the editor has a material interest. So palpable does this appear in its pages, that we can only wonder at the gullibility of man. What is true of this particular journal, is true in a lesser degree of all trade journals, and the safe course is to not encourage or patronize them in even the smallest degree. As a profession, we have it in our scope of influence to banish from all medical journals and from many lay journals and papers, the obnoxious proprietary, patent medicine and fake cure advertisement. Did you ever in your religious paper, no matter what its name or denomination, observe the many fake cure and patent medicine poisons advertised? Their very numbers prove the value of the religious press to that class of fakirs. And be it said with shame that there are none so susceptible to the blandishments of the advance agent and his complimentaries, and none more willing to prostitute their calling by lending their names to promote the sale of patent medicine poisons and fakirs, than is the ministry. Lest I incur some harsh criticism for this statement, I will say just here that I have a right to predicate such a conclusion upon the number of apparently sincere, life-saving endorsements from the clerical profession which we see in almost every paper. I believe it is our duty to pro-

test to the publishers of our religious papers against the practice of prostituting religion in the interest of vampires, who prey upon the poor and afflicted. *Collier's Weekly*, *The Ladies Home Journal* and several other journals of wide circulation, have recently begun a war upon the patent medicine fraud and the advertising quack. It is our duty to give these journals our heartiest support and I have had them place my name upon their subscription list as a token of my appreciation of their work. It may not be out of place to say that a member of our own State Association and the editor of a so-called medical journal, has recently seen fit to espouse the cause of patent medicines and quack cures, by attacking "The Great American Fraud" articles in *Collier's Weekly*. This editor, while possessing rather an unsavory reputation, has, I believe, managed to keep up his connection with the state society. The very fact of his good standing in our state association will enable the Proprietary Association, whose tool he is, to use him with good effect in counteracting the influence of the exposures which *Collier's Weekly* and *The Ladies Home Journal* have made. He has recently merged his journal into another hitherto reputable journal, which journal should, on this account be denied admission to the desk of every decent physician. It is to be hoped that his local society will deal with him as he deserves and that the profession of the state will refuse to recognize him any more than it would any other quack. I would not counsel undue haste in disciplining a member, in whom is left a spark of ethics, but when he openly and publicly and defiantly gives proof of his unethical disposition, I believe the quicker and the harder he can be dropped the better.

The Missouri State Medical Association is a creature of the organized medical profession of the whole state. It is as much your association and my association as it is any other man's association, and we each owe it our loyalty and support. If it stands as a truly representative organization, it must and will reflect the interests and opinions of the profession of the whole state. Does it do this? If not, why not? Is it really and truly what it pretends to be, a representative organization of all of its members? This question, even without its answer, will, I have no doubt, be construed as a criticism. While I desire not to be considered hypercritical, still if there be a faulty policy, which may in time jeopardize the usefulness of the organization, I believe it the part of wisdom to freely, openly and frankly discuss it and endeavor, as far as we may, to correct it. Physicians may for a time attend their societies and associations from a sense of duty, but ultimately their interest will wane, their energies relax and their attendance fail. It may be laid down as a fixed principle of life, that personal interest only will attract. If I attend my county society or state association, or whatever organization, there must be something of interest there, beside the mere satisfaction of duty done. The percentage of attendance at our annual meeting is very small, but the per-

centage of attendance of the city physician as compared with that of the country doctor, is relatively large. Why, may I ask, is this true? If my reasoning thus far is correct, the city physician surely finds some interest and attraction there not common to his country cousin. To the country doctor, it is a period of relaxation and rest in the society of his fellows and the hope that he may glean from them some practical idea, which stored away in some deep convolution of his grey matter, will sometime serve him in his lonely battle against disease and death. He does not care to hear a description of some rare disease, which he never saw and which in all human probability, he never will see, neither does he want to hear a tabulated report of five hundred operations for this, that or the other disease; but what he really would like is practical ideas of every day diseases as seen by the general practitioner. True, he has a professional interest in all medical subjects, but during these three days of mingled social and scientific intercourse his mind seeks by preference the utilitarian.

On the other hand, the city physician, who in almost all cases is a specialist, looks to the country doctor for a large per cent. of his cases. He too cultivates both the social and the scientific of the annual meeting, but with an entirely different motive. He is not looking for ideas, but he is there to impart ideas. He reads a learned paper upon some abstruse and unheard of subject, designed to impress his hearers with his deep erudition, vast experience and peerless skill. He patronizingly shakes the hand of the country doctors whom he meets, and when some general practitioner reads a paper upon typhoid fever or some other equally vulgar subject, he very kindly walks out into the hall and smokes a cigar, or holds a conversation with some friend in the rear of the audience. To him, the annual meeting is a seed time, and he does not fail to attend and read his paper. When the scientific program offers but little to interest the country doctor, who can blame him if he fails to attend? If we are to judge from the program alone, it would too often appear to be a city association instead of a state association. I believe the country doctor, perhaps less polished, but often more resourceful, who has successfully fought the battle alone, can teach us many things that the city physician, with all his polish, knows not of. If our association is to be a real state association, there ought to be and there must be, a larger per cent. of country doctors upon the program of our annual meetings. But you say: "The country doctor will not accept a place upon the program of our annual meetings." Perhaps to a certain extent that is true. They have been overawed by the city doctors until they are afraid to speak out in meeting. The committee on scientific communications appears to belong by right of discovery, or some other right, to the city doctors. Would you expect such a committee to be successful in inducing his timid country brother to take a place on the program? The very small representation which we have upon any committee or in any part of the administration of association affairs, deters the modest ruralist from "butting in." When we cease to worship the city physician as a human God, merely because he is from the city; and cease to regard the country physician as a fool simply because he is from the country, we will be in a fair way to a more perfect organization.

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Number 8

E. J. GOODWIN, M. D., EDITOR.

PUBLICATION COMMITTEE:

C. M. NICHOLSON,

WALTER B. DORSETT.

B. M. HYPES.

W. G. MOORE.

EDITORIAL.

MEDICAL MEASURES IN THE LEGISLATURE.

The recommendations which the Committee on Medical Education made to the Association, and which were adopted and referred to the Committee on Public Health and Legislation, have been embodied as amendments to the present act regulating the practice of medicine, and have been introduced in the Legislature by Senator Devilbiss. A bill making the crime of abortion a felony has also been presented, in the House by Dr. W. E. Gibson of De Soto, and in the Senate by Dr. Devilbiss. The Committee of the State Association also has been instructed to endeavor to reduce the time during which malpractice suit can be brought, from five years to one year. After considerable consultation with members in the Legislature and also with those conversant with the law, the Committee has had introduced, through Senator Kinney, a bill in conformity with the general ideas of the Association's resolutions.

The medical men, members of the General Assembly, have had conferences with the Legislative Committee, and have assured the members of the Committee of their hearty co-operation in connection with all matters that may be brought up by it. We are informed that so soon as the Committee of the House and Senate shall take up the consideration of these various measures, the Auxiliary Committee, a partial list of which is printed on next page, will be notified and their cooperation requested, as it may be considered most advantageous. We urgently request those county societies who have not as yet elected a representative for this Auxiliary Committee to do so at their earliest convenience and send the name and address to the chairman of the Legislative Committee, in order that the organized assistance of our county medical societies may be brought to bear for the accomplishment of the ends which the profession desires to attain.

MEMBERS OF THE AUXILIARY LEGISLATIVE COMMITTEE.

COUNTY.	NAME.	ADDRESS.	COUNTY.	NAME.	ADDRESS.
Adair,	E. C. Grim,	Kirksville.	Miller,	W. S. Allee,	Olean.
Audrain,	E. S. Cave,	Mexico.	Mississippi,	A. W. Chapman,	Charleston.
Barton,	A. B. Stone,	Lamar.	Nodaway,	Geo. Nash,	Maryville.
Benton,	E. E. Holtzen,	Cole Camp.	Nodaway,	M. M. Pollard,	Barnard.
Buchanan,	Chas. W. Fassett,	St. Joseph.	Nodaway,	L. E. Dean,	Maryville.
Butler,	J. J. Norwine,	Poplar Bluff.	Phelps,	S. L. Baysinger,	Rolla.
Callaway,	J. F. Harrison,	Fulton.	Platte,	C. E. Benham,	Parkville.
Carroll,	R. F. Cooke,	Carrollton.	St. Clair,	W. E. Bell,	Osceola.
Cass,	H. S. Prentiss,	Pleasant Hill.	St. Francois,	C. P. Poston,	Bonne Terre.
Chariton,	M. B. Austin,	Brunswick.	St. Genevieve,	G. M. Rutledge,	St. Genevieve.
Cooper,	O. W. Cochran,	Gooch Hill.	St. Genevieve,	H. J. Morganstein,	Weigarten.
Davies,	W. L. Brosius,	Gallatin.	St. Genevieve,	C. J. Hertich,	St. Genevieve.
Franklin,	C. F. Briegleb,	St. Clair.	St. Genevieve,	J. A. Wilkins,	St. Marys.
Gasconade-Maries-Osage,	John D. Seba,	Bland.	St. Louis,	H. G. Wyer,	Kirkwood.
Grundy,	W. H. Addington,	Spickards.	St. Louis City,	H. J. Scherck,	St. Louis.
Howard,	C. H. Lee,	Fayette.	St. Louis City,	R. M. Funkhouser,	St. Louis.
Howell,	D. T. Powell,	Thayer.	St. Louis City,	F. R. Fry,	St. Louis.
Jackson,	E. H. Thrailkill,	Kansas City.	Scotland,	O. F. Pile,	Memphis.
Jasper,	L. I. Matthews,	Joplin.	Vernon,	J. M. Yater,	Nevada.
Laclede,	J. A. McComb,	Lebanon.			
Lawrence,	J. A. Harris,	Mt. Vernon.			
Lewis,	P. F. Cole,	Steffenville.			
Lincoln,	W. R. Smith,	Troy.			
Madison,	S. C. Slaughter,	Fredericktown.			

PASS THE HOSPITAL BILL.

Pass the hospital bill.

The disclosures published recently in a St. Louis newspaper depicting the horrors of baby farming in St. Louis, should arouse the medical profession in this city to press the passage of the bill, introduced in the Municipal Assembly by Health Commissioner Bond, to place all hospitals, homes, etc., under the control of the Board of Health. Under the provisions of this bill anyone wishing to establish a sanitarium, lying-in hospital, retreat, or institute of any kind for the care and treatment of the sick, or for pregnant women, must first obtain a permit from the Board of Health.

This bill, if passed, will effectually prevent the traffic in babies for it would be necessary to obtain a permit from the Board of Health to conduct such a place, which permit, of course, would be refused, and if operated without such permit the proprietor would be subject to punishment for a misdemeanor. It will also protect those unfortunate women who, forced to seek the privacy of a lying-in home, find themselves powerless to resist the influence of unprincipled persons to lead them further astray. The number of inmates of so-called homes and sanitariums who have been forced into a life of shame through the machinations of those who hold the secret of their lives, none will ever know. We have laws to protect girls and young women from the nefarious practices of the procurer; we have laws regulating child

labor; but the deserted, cast-off, babe is handed over to the merciless baby farmer who thrives unhindered by law or ordinance. Nor law nor ordinance protects the child.

The legislative committee of the St. Louis Medical Society should exert its influence to secure the passage of the hospital bill. Every medical society in St. Louis and every philanthropic society, should join with the St. Louis Medical Society and demand that the Assembly pass the hospital bill.

PUBLIC MEETINGS OF COUNTY SOCIETIES.

In another column we publish a letter from Dr. J. M. Allen, and, under county society notes, the report of the public meeting of Clay County Medical Society held on December 31, 1906. Dr. Allen's letter and the report from Clay County Medical Society will prove interesting and profitable reading. We commend them to the officers and members of all affiliated societies.

The average layman still thinks that the medical profession when it asks for certain legislation, does so for selfish reasons, or for the purpose of limiting the practice of medicine to "regulars." Until they can be convinced that all legislation emanating from the organized profession is wholly and entirely in the interest of the general public, irrespective of its influence upon the financial earnings of the physician as a practitioner, they will continue in this erroneous belief.

One of the chief objects of our organization is to educate the people in the principles of preventive medicine, insofar as these principles can be expounded to persons untrained in the science of medicine. Some special societies are doing much to enlighten the public in the care of the sick, particularly those afflicted with consumption, but the influence exerted by these societies is necessarily limited. If, however, each county society would designate a certain day as the time for holding a special meeting open to the public, there would soon be a very general awakening of the people, and a great desire to know more would grow upon them.

These meetings should be held all on the same day if possible, and the objects of the undertaking widely published by announcement in the county newspapers for several weeks prior to the date of the meeting. Further, if this work should be undertaken by all county societies throughout the whole country, the resulting influence would be far-reaching, permanent and powerful for good.

In addition to these public meetings, as suggested by Dr. Allen the county society could delegate a member to attend the meetings of school teachers within the county or district, to lecture on school hygiene and public health. Dr. Allen has found school teachers ready listeners to these lectures and eager to know all that could be of service in their work as teachers in the public schools. If properly instruct-

ed, school teachers would be of the greatest assistance in extending a general knowledge of the more important phases of school hygiene and the prevention of disease. In time, this system might become a part of the regular curriculum of our public schools, just as is done now in teaching drawing, music, and other special branches of learning, by giving lessons once a week in each school.

THE ANNUAL MEETING.

Elsewhere in this issue will be found the preliminary program of the next annual meeting of the Missouri State Medical Association.

Letters have been addressed (by the Committee having the matter in charge) to each affiliated Society, requesting titles of papers, also to the medical schools of the state asking that a committee be appointed to prepare a pathological exhibit. A joint meeting of the committees will be held early in February and plans perfected.

The pathological exhibit will be a great addition to the annual meeting and that it will prove a success is beyond a doubt. The scientific work will probably be divided into three sections. First, General Medicine. Second, Anatomy and Surgery and Third, Eye, Ear, Nose and Throat.

The business of the Association should be completed during the morning and afternoon of the first day and the formal opening should take place at eight o'clock in the evening.

All the sections should be called to order promptly at nine o'clock on the morning of the second day, as only in this way can sufficient time be devoted to the scientific program.

Jefferson City is the logical place for meeting, not only because it is the centre of the state but because the Capitol building furnishes suitable halls for the sections and pathological exhibit and has good hotel facilities.

The Cole County Medical Society constitutes the Committee of Arrangements, and all who attended the last meeting will take pleasure in recommending the doctors of the Capitol City as most gracious hosts.

EXAMINATIONS FOR LICENSE TO PRACTICE.

The State Board of Health of Missouri will hold examinations for license to practice medicine, surgery and midwifery, simultaneously in Kansas City and St. Louis on April 16-17-18th, 1907. The examination of midwives will be on the morning of the 18th. In St. Louis the examination will be held in Barnes Medical College beginning at 9 a. m., and in Kansas City the examination will be held at Midland Hotel beginning at 9 a. m., April 16th. Application should be made to the Secretary thirty days before this examination as directed by Section 3 of House Bill No. 137, Session Acts of 1901. "All persons appearing for examination shall make application in writing

to the Secretary of said Board thirty days before said meeting." Each applicant will be assigned to one of these places and to save confusion he must by all means attend the place to which he is assigned; if in his application he designates a choice of places he will be assigned to that place, otherwise the Secretary will assign him to the place that appears to be the nearest or most convenient for him to attend.

PRELIMINARY PROGRAM.

Next Annual Meeting, Jefferson City, May 14, 15, 16, 1907.

J. M. Allen, M. D.....	Liberty
"Tuberculosis a Communicable Disease."	
W. S. Allee, M. D.....	Olean
"Duty of a Practitioner."	
W. M. Bayliss, M. D.....	Columbia
"The State Sanitarium."	
G. A. Beedle, M. D.....	Kansas City
"Carcinoma of the Breast."	
T. L. Bradley, M. D.	Warrensburg
Title not announced.	
J. D. Brummall, M. D.....	Salisbury
Title not announced.	
J. Robert Buchanan, M. D.....	Nevada
"Some Reflections Concerning the General Practitioner."	
A. B. Burgwin, M. D.....	Fayette
"The Duty of the Examining Surgeon for Life Insurance Companies."	
H. S. Crawford, M. D.....	Harrisonville
"Attitude of the Public Toward the Doctor."	
R. O. Cross, M. D.....	Kansas City
"Consumption and Civilization."	
H. E. Derwent, M. D.....	Clinton
"The Eye and the Nervous System."	
F. Devilbiss, M. D.....	Spring Garden.
"Local Medical Organization."	
T. H. Doyle, M. D.....	St. Joseph
"Have We Any Infallible Signs, Symptoms or Methods by Which We Can Diagnose Typhoid Fever Earlier Than the End of the First Week?"	
H. E. Dunlop, M. D.....	Canton
"Medical Education; Preliminary and Professional."	
Wm. Frick, M. D.....	Kansas City
"Some Forms of Scabies Seen in Private Practice."	
C. E. Fulton, M. D.....	Springfield
"The Surgical Treatment of Enlarged Prostate."	
C. G. Geiger, M. D.....	St. Joseph
"Inguinal Hernia."	
O. G. Gleaves, M. D.....	St. Joseph
"The Neglected Side of the Profession."	

- C. B. Hardin, M. D.....Kansas City
 "What We Have and What We Should Have of Medical Law Gov-
 erning the Practice of Medicine."
- R. D. Haire, M. D.....Clinton
 "Local Anesthesia."
- James Hanks, M. D.....Brashear
 "Autointoxication."
- Geo. Homan, M. D.....St. Louis
 "Sanitation and Tuberculosis."
- C. C. Leeper, M. D.....Braymer
 Title not announced.
- P. I. Leonard, M. D.....St. Joseph
 "The Tonsillar Ring as an Etiological Factor in Diseases of the Ear,
 Nose and Throat."
- T. F. Lockwood, M. D.....Butler
 "Medical Scraps."
- W. J. McGill, M. D.....St. Joseph
 "Stricture of the Rectum."
- T. E. Potter, M. D.....St. Joseph
 "Mastoid Abscesses and Their Sequellæ."
- William Porter, M. D.....St. Louis
 "Civic Responsibilities."
- John Punton, M. D.....Kansas City
 "A Plea for the State Care of Nervous Individuals."
- C. F. Roberts, M. D.....Kansas City
 "A Few Points Relative to Prostatectomy."
- J. D. Seba, M. D.....Bland
 "Tubercular Peritonitis."
- J. N. Scott, M. D.....Kansas City
 "Present States of X-Ray Treatment of Malignant Growths."
- R. Winn, M. D.....Hlasco
 Title not announced.
- L. M. Warfield, M. D.....St. Louis
 "Early Diagnosis of Tuberculosis."



DOCTOR AUGUSTUS V. L. BROKAW.

Doctor A. V. L. Brokaw died at his home in St. Louis on January 25th.

Doctor Brokaw was born in St. Louis in the Superintendent's room at the old City Hospital in 1863, his father, Doctor F. V. L. Brokaw, being at that time Superintendent of the institution. He was educated at the old Central High School and later graduated from the old Missouri Medical College.

He took a post-graduate course of one year in surgery and then went abroad, studying at the University of Berlin, the University of Vienna and other places.

Returning to St. Louis, Doctor Brokaw launched into the practice of his profession, and soon became professor of anatomy at Missouri Medical College. About this time also he became assistant physician at St. John's Hospital, a post which he held for seventeen years and was chief surgeon for six years. He was professor of clinical surgery in the medical department of St. Louis University, and a member of the following medical societies: American Medical Association, Tristate Medical Association, St. Louis Medical Society, Missouri State Medical Association, Southern Surgical and Gynecological Association.

Dr. Brokaw's manner was characterized by abruptness but the genuine candor and frankness of the man soon became apparent on acquaintance. To the poor and deserving he was notably charitable and his left hand never knew what his right hand did for those less fortunate than he. As a teacher he was clear and forceful and al-

ways had a strong following among his students. As a citizen he was easily interested in all enterprises that promised good to his city, and took great pride in its progress and growth. Among all classes he will be greatly missed because ever a friend to the weak and a helpful ally to those strong in purposes for good.

CORRESPONDENCE.

Liberty, Mo., January 5, 1907.

To the Editor Journal of the Mo. State Medical Assn.:

For the last twenty-five years, I have been urging our State Medical Society and County Medical Society, that the greatest need of our people was proper education along the lines of State Medicine and Public Hygiene, asserting that when that is done, there will be no difficulty in securing all the legislation and appropriations that we need to forward this noble humanitarian idea of public health.

For the purpose of reaching the people so that they could be efficiently educated, I have often recommended that County and District Medical Societies should hold one public meeting annually, similar to the meeting held by the Clay County Medical Society, December 31st, 1906, inviting all the people, ladies and gentlemen, to attend. A further and more direct way of educating the people is through the teachers of the public schools, thus reaching every nook and corner in the state. To accomplish this end, a competent physician in each county should be selected by the county societies to deliver an address on public and school hygiene to the teachers, at their institutes in the county, or at their meetings which occur annually. I have addressed a great many of these meetings, and have always found the teachers more than ready to listen to addresses on these subjects; indeed, they have invited me many times. From these meetings they go to every school district in the county, and come directly in contact with the people. Being friends of public health and school hygiene they disseminate these ideas. Besides this, it enables them to lecture to their pupils in the schools.

If these plans were adopted throughout the state, or I might say throughout the United States, it would bear a rich harvest: our boards of public health would then have only to ask for legislation and appropriations. The people are always ready to direct their officers on any subject they understand. It cannot be expected that they would demand legislation and appropriation of money for something they know nothing about. Therefore, the fault of not having such legislation and appropriations as we require for the reforms so badly needed, lies at the door of the physicians of the state.

Respectfully;

J. M. ALLEN, M. D.

COUNTY SOCIETY NOTES

BENTON COUNTY MEDICAL SOCIETY.

The first meeting in 1907 was held at Lincoln on January 8th.

Our district councillor, Dr. Robert D. Haire of Clinton, was present and favored the Society with a paper on the subject of "County Organization." This was a very interesting essay and received much favorable comment from the members.

Doctors Rhodes and Jones each presented a case for examination, both of which proved very interesting and brought out considerable discussion.

Dr. Rhodes was on the program to read a paper on "Abortion," but as the entire time had been consumed in discussing other subjects, he was requested to present his paper at the April meeting.

The next meeting will be held at Warsaw, April 9th.—W. G. Jones, Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY.

At the last meeting of this Society an interesting Symposium on Pneumonia was presented, as follows: Etiology and Symptoms, Dr. A. L. Gray; Diagnosis and Prognosis, Dr. B. W. Toothaker; Treatment, Dr. J. F. Owens. Dr. A. E. Timmerman read a paper on "Contusions of the Abdomen," reporting a unique case.

Dr. J. H. McCoy and Dr. J. K. P. Bowen were elected to membership. Sixteen additional applications for membership were presented, owing to the energetic missionary work being done in this field by Mr. C. H. Roney, the representative of the A. M. A.

The subject of insurance examination fees came up for discussion, and it was the consensus of opinion that the fee of \$5 for medical examination was just and fair. After some discussion a resolution was adopted, similar to the Kentucky form, and all members agreed to stand by the decision of the American Medical Association in this matter.

The Society expressed itself in hearty sympathy with the amendments being offered to the various medical bills at Jefferson City, and pledged itself to cooperate with the State Legislative Committee in the interests of the profession. Dr. Chas. Wood Fassett was elected to represent the Society in legislative affairs. The Committee on Organization reported that progress was being made, and that a call for a meeting would be issued shortly by Dr. W. T. Elam, councillor,

for the organization of a medical society of the Seventh Councillor District.

The newly-elected officers of the Society are: President, Dr. O. G. Gleaves; Vice Presidents, Dr. S. F. Kessler and Dr. W. J. McGill; Treasurer, Dr. J. M. Bell; Secretary, Dr. Chas. Wood Fassett; Censor, 3 year term, Dr. T. E. Potter; Delegate, Dr. T. H. Doyle; Alternate, Dr. O. B. Campbell.

President Gleaves appointed the following committees for the year: Public Health and Legislation; Drs. J. W. Ferguson, Chas. Wood Fassett, L. C. Bauman. Executive; Drs. F. A. Patterson, A. L. Gray, W. J. McGill; Program, Drs. Wood Fassett, W. T. Elam, J. F. Owens.—CHAS. WOOD FASSETT, Secretary.

BUTLER COUNTY MEDICAL SOCIETY.

The regular session was held on December 28th at Poplar Bluff.

Dr. Alfred R. Rowe was received as a member on transfer card from the St. Louis Medical Society.

No scientific papers were read at this meeting and after the transaction of routine business, officers were elected for the year 1907 as follows: President, C. F. Green; vice-president, J. J. Norwine, secretary, A. R. Rowe; treasurer, C. B. Jones.—J. W. Mott, Acting Secretary.

CALLAWAY COUNTY MEDICAL SOCIETY.

This society met on January 10th and elected the following officers for 1907: President, G. F. Roots, Tebbetts; 1st vice president, J. T. Moore, Fulton; 2nd vice president, H. I. Owen, Fulton; secretary and treasurer, J. F. Harrison, Fulton.

The roads in our county are in such bad condition that it is practically impossible for the members in the country to attend; for that reason the society was adjourned to meet April 10th.—J. F. HARRISON, Secretary.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY.

The following resolutions were adopted at the last meeting:

Whereas, The widespread use of patent and secret medicines has become a serious menace to the people of our country and

Whereas, It has been credibly reported that a number of large pharmaceutical manufacturing firms that make standard preparations for the medical profession also prepare, for the exploiters, many of the dangerous proprietary and patent medicines, and

Whereas, Small pharmaceutical firms have been dispensing and prescribing poisonous and non-poisonous preparations, *ad libitum*, contrary to the powers so given them by the present statutes, and

Whereas, The same class of pharmaceutical establishments have and are, at times, using cheap, adulterated and substitution products,

violating the confidence that the physicians place in them, dangerous to the people, derogatory to the dignity and welfare of the profession, and an aid and encouragement to quackery.

Therefore, be it Resolved, That we endorse the action of the committee on public health and legislation in preparing bills to remedy such evils as that of the nostrum and patent medicine, also their effort to get the General Assembly to pass a bill for an appropriation to maintain the Missouri State Board of Health; also any new measures regulating the practice of medicine, surgery and obstetrics, as approved by the State Medical Association; and that we also endorse the St. Louis Medical Society, also its efforts to suppress the crime of criminal abortion, also the action of the Missouri State Board of Health, in its endeavors to check the latter evil, also commend the Health Board, the Dental Board, and Pharmacy Board, for their activity in prosecuting the violators of the laws pertaining to their respective branches, as the laws exist at the present time, and to the end that we may elevate our profession and eradicate charlatanism.

Be It Further Resolved, That the Cape Girardeau County Medical Society ask our County Representative and Senator, from this District, to give their aid and support to such measures as will tend to suppress and eradicate such evils.

G. W. VINYARD,

R. F. WICHTERICH,

H. L. CUNNINGHAM,

E. H. G. WILSON,

Committee.

CARROLL COUNTY MEDICAL SOCIETY.

Carroll County Medical Society held its regular meeting January 9th. Eleven applicants for membership were approved and on ballot were elected. To these new members the society extends a hearty welcome, and cordially invites each one to attend every meeting and endeavor to make the meetings more profitable and more interesting during the new year than ever before. Your county society is what you make it.

Three communications of vital importance to the society and to the medical profession in general were read and discussed.

This being the time for the annual election of officers, the following were elected: President, W. C. Baird, Bogard; vice-president, Dr. Cooper, Carrollton; secretary, R. F. Cook, Carrollton; reporter, R. M. Miller, Bogard. After election of officers some time was spent in reporting cases and a general discussion of the same.

Dr. R. F. Cook, with Dr. Highsmith alternate, was appointed delegate to confer with the committee on Public Health and Legislation. The next meeting will be held at Carrollton, on February 13th.
—R. M. Miller, Reporter.

CASS COUNTY MEDICAL ASSOCIATION.

The first regular meeting of the Cass County Medical Society, for this year was held in Harrisonville, January 3rd.

The weather was cold and stormy and the roads muddy, but the attendance was far better than was expected.

Physicians are beginning to realize that the man who does not attend his local medical meetings whenever possible will soon be left behind.

Our newly elected President, H. A. Brierly of Peculiar, was present and read his paper on "Pneumonia up to Date" which produced one of the warmest and most profitable discussions ever heard in our Society. The old ideas of pathology, etiology, prognosis and treatment were brought face to face with the newer and more recent ideas and in view of the increased death rate from this disease the older practitioners seemed to have the best of the argument, viz.; Treat the patient—then hydrag. mite doveri and quinine.

This one subject was so decidedly interesting that other business up for consideration had to be hurried through.

The question of fees for insurance examinations is rapidly being settled by the circulation of resolutions for signers thereto, either in or out of the society. The paper is still going the rounds and seems to be meeting with success which will be reported to our State Secretary as soon as possible.

H. S. Crawford, of Harrisonville, was selected to read a paper at our next meeting preparatory for reading at the State meeting in Jefferson City, in May.

The Secretary and Reporter was tendered a complimentary vote of dues for the year paid by the society.

Those who took an active part in the discussion were J. S. Triplett, R. D. Ramey, G. M. Anderson, H. S. Prentiss, A. R. Elder, D. W. Conger and H. S. Crawford.

The Secretary made his report for last year.—W. F. CHAFFIN, Reporter.

CHARITON COUNTY MEDICAL SOCIETY.

Regular meeting was held in Salisbury on January 27th.

A communication from the State Secretary was read in which it was urged that the county societies co-operate with the State Society in an effort to secure needed reforms in laws governing criminal abortion, and draft of the new law was read. Doctors Welch and Brumhall were appointed a committee to wait upon our county representative and Senator Fields, and request them to support the measure.

The following physicians were elected to membership: Doctors T. Banning, W. T. Todd, G. W. Lawhorn and Jno. W. Hardy.

Officers for the year 1907 were elected as follows: President,

Oliver McEwen; vice-president, G. W. Hawkins; second vice-president, R. G. Epperly; secretary-treasurer, C. A. Jennings; legislative representative, M. B. Austin; reporter, C. A. Jennings; delegate, Oliver McEwen. Representing the Society on the program of the next meeting of the State Association, Dr. J. D. Brummall; Censors; J. D. McAdam, C. H. Temple, H. C. Tatum.

The Society then adjourned and the members gathered around festive board prepared for their entertainment, and while indulging in material pleasures promised their support to the work of the Society during the coming year. The meeting was characterized by a general feeling of good fellowship and enthusiasm in the aims and objects of the Association.—C. A. JENNING, Reporter.

CLAY COUNTY MEDICAL SOCIETY.

The Clay County Medical Society held an open session in the Court House at Liberty, December 31st, with Dr. Haney Rowell in the chair and Dr. F. H. Matthews, secretary. The following members were present: Drs. E. H. Miller, John Rothwell, J. M. Allen, R. E. Sevier, J. T. Marsh, J. J. Rice and L. J. Jones.

To this meeting the public was invited. The court room was well filled during the day with good citizens, ladies and gentlemen.

The first paper, "Massage—Its Benefits and Injuries," by Dr. F. H. Matthews, was brief but pointed. He claimed that it is almost as old as civilization; that, when it is scientifically directed by a physician who thoroughly understood anatomy, pathology and physiology, it could be made a very beneficial and useful factor in medicine, but, if directed by ignorance, it could be made not only very injurious but dangerous to life; because it would cause the transferring of a disease through absorption by the lymphatic gland and carried to internal vital organs. He illustrated this in cases of tuberculosis of the joints and bones being transferred by massage to the internal vital organs. This subject was also discussed by Drs. J. J. Rice and J. M. Allen.

The next paper was "Hygiene of the Public School," by Prof. E. C. Hamilton, Superintendent of the Liberty Public Schools. This was a strong well-written paper, pointing out many of the defects in our public school system and the great necessity of legislation to remedy these defects. The discussion on this subject was opened by Miss Mary Jean White, of Harrisonville, School Commissioner of Cass County. Miss White has been superintendent of some of the best public schools in the state, and is familiar with the law relating to public schools and the practical side of public hygiene. Her address was delivered in an easy and graceful manner and was well received and complimented very highly.

Prof. H. G. Parker, of William Jewell College, delivered the next address on "Pure Water." He, like all speakers who thoroughly understand their subject, made it easy to be understood, and the full force

of benefits that might be derived from this knowledge was made so plain that a child could have comprehended. He showed that the dust of the air contained many disease producing germs. These are blown by the currents of wind and find lodgment on the house, then to be washed by the first rain into the cistern, unless the water was turned off until the roof was thoroughly drenched. He spoke also of the great importance of keeping the cisterns well cleaned out and well disinfected by various gases that are germicidal. It was further said that people who use wells, and the public schools in the country, should have these wells walled up with brick laid in Portland cement for at least ten feet in the ground, and the outside cemented or covered with Portland cement. This would practically protect the well from surface water which often contains the germs of epidemic diseases, as well as the germ of consumption.

The next address was by Dr. Herman E. Pearse, of Kansas City, on "State Medicine." Dr. Pearse has given a great deal of time to the study of public health. He touched upon the pure food question and pointed out the vile compounds of food that are sold to the public, and urged that our legislature pass a rigid pure food law. He then pointed out clearly and forcibly the laws needed to give to the Board of Health the police power necessary to protect the people from the ravages of epidemic diseases, also legislation to guarantee to the people competent physicians.

The next speaker was Dr. E. H. Miller on "Hygiene of Small Towns." This paper covered the field thoroughly and well. Each town in the county would be benefited by having a copy of it and rigidly adhering to the doctor's advice.

The next paper, "National Medicine," was discussed by Hon. Joshua Alexander, who, in a most forcible manner demonstrated the limits of the authority of the National Government in meddling with the state affairs. Yet, he believed that a department of Public Health, similar to the department of Agriculture, presided over by a distinguished physician, to be one of the president's family or a secretary, would be a great benefit, and would further the interest of public health, as well as the health of the army and of the navy.

This discussion was followed by a talk from Dr. J. E. Cook, who expressed great admiration for the work that is being done by the medical profession in the interest of public health and thought they ought to have the united support of every citizen in the state. Dr. Cook stated that there was no parallel in any of the professions, or in any of the commercial pursuits, to the action of the regular medical profession in their noble effort of attempting to decrease the amount of sickness, thereby, decrease the amount of their individual revenue. Further, that all we know of hygiene or how to protect our health, we get alone from the regular medical profession and nowhere else.

Rev. F. V. Loos followed Dr. Cook in which he gave a graphic

description of his experiences as a member of the Board of Public Charity of the state, urging as a necessity of making ample legislation so as to give the board of public health the power to be efficient in controlling the ravages of epidemic diseases.

The next speech was by Hon. D. C. Allen, in which he referred to the efficiency of the Japanese army as largely the result of their thorough knowledge of the laws of hygiene and the rigid enforcement of them. This should be an object lesson to us, that is, the enforcement of all the present laws relating to hygiene; and, as the country becomes more densely populated, new laws will have to be made to meet the emergencies. Further that the duty of the medical profession and the school teacher to educate the people along the laws of hygiene. People once educated on any subject always do the right thing.

The gentlemen who took part in the discussion of the various questions were Dr. H. E. Pearse, of Kansas City, Dr. E. H. Miller, Dr. J. J. Rice of Kearney, Dr. J. M. Allen, Prof. Hamilton, Rev. F. V. Loos, Dr. J. E. Cook, D. C. Allen and Dr. L. J. Jones.

This is the third open session of the Clay County Medical Society, the objects of which have been educational to the public and to the teachers of our public schools. We are very glad that so many of our citizens attended the meeting and gave such profound attention to everything that was said. That it was intensely interesting to them and the medical profession, there can be no question. Therefore, we infer it will be of large benefit to the citizens of the town and county.

Telegrams of regret were received from Dr. F. J. Lutz of St. Louis and Dr. C. Lester Hall of Kansas City, because of their inability to be present.

At the conclusion of the meeting, the following resolution was introduced by Dr. J. M. Allen:

Resolved, That it is the wish of all present that our Representative of this county and Senator of this district be requested to lend their aid to secure the passage of such legislation in the interest of Public Health and School Hygiene as may be recommended by our State Board of Health and Superintendent of Public Schools; and make such appropriations as will render said board efficient in controlling the ravages of epidemic diseases.—J. M. ALLEN, Chairman.

CLINTON COUNTY MEDICAL SOCIETY.

A called meeting convened in Plattsburg on December 20th with a good attendance of the members. This is the first meeting we have held for several months, but we anticipate that regular meetings will be held in future. The following officers were elected for 1907:—President, John Sturgis, Perrin; vice-president, G. B. Rusk, Lathrop; secretary-treasurer, E. A. Colley, Plattsburg; delegate to State Association, J. A. Franklin, Cameron; board of censors, Robt. W. Rea, 1907; John Kay, 1907-8; J. A. Franklin, 1907-8-9. The applications of the

following physicians were received and referred to the board of censors for report at the next meeting: Thomas Doran, Trimble; Archibald Robertson, Lathrop; John Brown, Cameron; Jesse Longfield, Turney; Melvin L. Peters, Cameron; John T. Kinsey, Lathrop; Harry E. Desmond, Plattsburg.

MEETING OF JANUARY 1, 1907.

Clinton County Medical Society met in regular session January 1st, 1907, with a fair attendance of members. The regular order of business was suspended to receive the report of the Board of Censors which resulted in Dr. M. L. Peters of Cameron and Dr. Jesse Longfield of Turney being taken in as members of this society.

Dr. R. W. Rea, read a paper on erysipelas which was concise in regard to history and was discussed by Dr. J. A. Franklin who gave his treatment.

Dr. John Sturgis, gave his third inaugural address, which was on the "Code of Ethics."

The next meeting will be held in Plattsburg, February 5th.—E. A. COLLEY, Secretary.

COOPER COUNTY MEDICAL SOCIETY.

The Cooper County Medical Society met in Boonville on January 8, 1907, eight members being present.

Dr. Hurt reported a case of varicella which had been atypical in many respects; a case which had caused some doubt and alarm in the neighborhood on account of its resemblance to smallpox. The discussion of this case and similar ones occupied an hour or two and brought out much that was of interest.

The annual election of officers resulted in the following: President, Dr. F. R. Smiley; vice pres., Dr. C. H. VanRavenswary; sec-treas., Dr. Jno. R. Lionberger; delegate, Dr. R. L. Evans; censor for three years, Dr. J. R. Lionberger.

The name of Dr. A. W. Nelson being reported favorably by the board of censors the society proceeded to a vote and Dr. Nelson was elected.

Dr. O. W. Cochran read the proposed amendments touching criminal abortion and admission of evidence. Upon motion the President appointed Dr. O. W. Cochran a committee of one to interview the representative of Cooper County in the General Assembly and ascertain whether he would aid in the passage of the bill.

Next meeting will be held on the first Tuesday in February.—JOHN R. LIONBERGER, Secretary.

GREENE COUNTY MEDICAL SOCIETY.

MEETING OF DECEMBER 28, 1906.

The regular meeting of the society was held at Springfield, December 28.

Dr. J. E. Tefft resigned as a member of the board of censors and Dr. J. C. Matthew was elected to fill this unexpired term of office.

The president appointed a committee to examine the proposed amendment to the state law in regard to criminal abortion.

Drs. E. G. Beers, J. W. Clark, T. U. Crane, M. H. Mayfield, S. W. Tickle of Springfield and Drs. L. E. McClure and J. K. Perry of Walnut Grove, were elected to membership in the society.

MEETING OF JANUARY 11, 1907.

This being the annual meeting the out-going officers made their reports. The secretary reported thirty-seven active members. The society lost by death during the year 1906, one of its most faithful and honored members, Dr. John H. Fullbright. The meeting night has been changed to the second and fourth Friday nights in each month, except during the month of August. The treasurer reported all debts paid and some cash on hand.

Dr. J. R. Boyd was elected president; Dr. T. A. Coffelt, vice president; Dr. J. L. Ormsbee, secretary; Dr. D. B. Farnsworth, treasurer; Dr. Lee Cox was re-elected a member of the board of censor, for three years.

Drs. Wm. Rienhoff, C. Bryant Elkins and U. F. Kerr, were elected to membership in the society. Several applications for membership have been presented with promises of more to follow. The prospects for increased membership and interest in medical association work in Greene County is very good.—J. L. ORMSBEE, M. D., Secretary.

HOWARD COUNTY MEDICAL SOCIETY.

The regular meeting was held at Fayette on January 4th. Dr. C. H. Lee was appointed to act in conjunction with the State Board of Health and the Committee on Public Health and Legislation in response to communications from the chairman of the State Committee.

Doctors Lewis and Wright reported a case of gun-shot wound.

On motion, the president appointed a committee consisting of Doctors Burguin, Wright and Richards to prepare an appeal to the Governor in behalf of Dr. Todd.—C. W. WATTS, Reporter.

JASPER COUNTY MEDICAL SOCIETY.

MEETING OF DEC. 17TH, 1906.

The regular meeting was held in Y. M. C. A. parlors. Fifteen members present.

Dr. Lanyon read a paper entitled, "Gonorrheal Infection." This

was freely discussed by many members present.

Doctors A. B. Clarke, M. B. Hornton, W. H. Mallory and A. O. McMichaels were elected to membership.

Dr. L. I. Matthews read a communication from United Pure Food Committee from Missouri and moved that the society endorse the proposed pure food bill and ask our Representatives and Senator in the State Legislature to use all favorable means to have it become a law. This motion was adopted.

Dr. L. I. Matthews was appointed a member of the Auxiliary Committee of the State Committee on Public Health and Legislation.

The following officers were elected for year 1907: President, C. M. Shelton; vice president, J. W. Clarke; secretary, R. M. James; treasurer, G. W. Miller; censor, W. H. Lanyon.

MEETING OF JANUARY 7TH, 1907.

The annual meeting of the society was held in Y. M. C. A. parlors. All members of the society were present.

Dr. J. F. Binnie, of Kansas City, Mo., guest of society, read a very able and instructive paper on the "Prophylactic Treatment of Traumatic Epilepsy."

Dr. Binnie, after thoroughly reviewing the causes of mental disturbances following injuries to the head, proved by statistics that the best results were obtained when the defect in the cranium was closed with some hard substance, preferably bone. This closing of defect in cranium should be done at primary operation following the injury when possible; if not, a secondary operation for that purpose should be performed. Discussion was general by members of the society, Dr. Binnie closing. Moved and seconded that Dr. Binnie have his paper published in STATE JOURNAL, if agreeable to him. Moved and carried that a vote of thanks be tendered Dr. Binnie for his address.

The society then adjourned to the Olivia apartments where a banquet was served. Forty covers were laid. After partaking of the many good things to eat and drink, the following toasts were responded to: "The President of the U. S.," by Dr. J. D. Pifer; "The A. M. A.," by Dr. L. I. Matthews; "The County Medical Society," by Dr. C. M. Ketcham; "The Country Doctor," by Dr. W. E. Steele; "Our Guest," by Dr. S. A. Grantham. Dr. Binnie then responded in his usual amusing and instructive way.

MEETING OF JANUARY 21st, 1907.

The regular society met in regular session in Y. M. C. A. parlors at 8 p. m. The secretary, R. M. James, was reported to be sick in St. Louis, and R. L. Neff was appointed secretary for the evening. Eleven members of the society were present.

Dr. Z. T. Blackwell presented a patient suffering from eczema

rubrum, eruption covering nearly the entire body; diabetes mellitus was also present.

Dr. R. S. Kelso read a very exhaustive paper on "Pott's Disease." Discussion was general. -The treasurer's annual report was read, showing \$53.40 cash on hand.

Dr. W. H. Lanyon reported that one Dr. Brays, of Webb City, Mo., claiming himself to be a cancer specialist, was not registered in county. Moved and carried that Dr. Lanyon file information against Dr. Bray before the county prosecutor.

Dr. Lanyon presented to the society a very ingenious apparatus for binding and filing medical journals.

Dr. E. E. Wutke, of Duenweg, asked for a transfer to Harvey County, Kansas Medical Society, as he expected to move there.—R. M. JAMES, Secretary.

JOHNSON COUNTY MEDICAL SOCIETY.

MEETING OF SEPTEMBER 11, 1906.

A resolution adopted by the Judicial Council was read. This resolution was a request that county societies accept new members on this date and credit them with membership until January, 1908, on payment of dues for the year 1907. This resolution was approved and adopted.

Communication from Dr. Overholser, councillor for the district, regarding our political responsibilities, was read and received.

A resolution was introduced favoring the publication of our roster of membership in some newspaper in the country, and after considerable discussion was adopted. A committee consisting of the President and Secretary was appointed to carry out the objects of the resolution at such time as they decided would be for the best interest of the society.

Dr. J. A. Adcock read a paper entitled "Some Needed Legislation." He pointed out the defects under our present laws and read the amendments, which were to be introduced in the Legislature. The Society approved the proposed amendments.

Dr. John T. Anderson of Cornelia presented a very interesting clinical case of Exophthalmic Goitre.

MEETING OF DECEMBER 12, 1906.

This was our annual meeting and the business of the year was reviewed, reports received from the officers, and new officers elected for 1907. Three applications for membership were presented and referred to the board of censors for report at the next meeting.

A resolution in regard to fees for examinations for life insurance was read and its provisions endorsed by the Society.

On motion Dr. T. L. Bradley was appointed to read a paper at the next meeting of the State Association.

Dr. N. J. Raines of Knobnoster, having moved to Kentucky was upon his request granted a transfer card showing him to be in good standing with this Society, and recommending his admission to the local society of the town in which he will locate in Kentucky.

Officers for the year 1907 were elected as follows: President, L. J. Schofield, Warrensburg; vice-president, W. G. Thompson, Holden; secretary, E. H. Gilbert, Warrensburg; treasurer, O. B. Hall, Warrensburg; board of censors: Z. Case, Warrensburg, W. H. Aber, Montserratt; J. T. Anderson, Cornelia.—E. H. GILBERT, Reporter.

LAWRENCE-STONE COUNTY MEDICAL SOCIETY.

At a special meeting of the Lawrence-Stone County Medical Society, the following resolutions were endorsed:

Resolved, That we have read the proposed pure food law and discussed the merits and demerits of the bill, and that we hereby give our endorsement to the same. Should it become a law, we believe it will have a most salutary effect in ridding the state of a great many evils now practiced in food and drug adulterations.

Resolved, Further that we recommend that three thousand dollars be fixed as the salary of the commissioner instead of two thousand as proposed in the bill.

Resolved, Further that we instruct our Secretary to furnish the State Senator of the 18th Senatorial District, our County Representatives to the Legislature, and the Secretary of the State Board of health with a copy of these proceedings.

Resolved, That we urge our State Senator and County Representatives to give their support to the bill. By order of the Society.

C. A. MOORE, Secretary,

F. S. STEVENSON, President.

NODAWAY COUNTY MEDICAL SOCIETY.

At the regular Annual Meeting of the Nodaway County Medical Society, held in Maryville, Mo., January 8, 1907, the following officers were chosen for 1907: President, F. R. Anthony, Maryville; vice-president, Wm. Wallis, Maryville; secretary, H. L. Sayler, Elmo; treasurer, J. H. Todd, Maryville; delegate, F. R. Anthony, Maryville.

Dr. Anthony, president, and Dr. Sayler, secretary, were elected to succeed themselves, this being the third year for the former and the second year for the latter in their respective offices.

Committees appointed for 1907 were: "Program and Scientific Work,"—H. L. Sayler, Elmo; E. L. Crowson, Pickering; D. A. Sargent, Hopkins. "Social Entertainment"—A. B. Allen, F. C. Wallis, and J. H. Todd: Maryville. "Legislation"—G. A. Nash, and L. E. Dean of Maryville; M. M. Pollard, of Barnard.—H. L. SAYLER, Secretary.

PETTIS COUNTY MEDICAL SOCIETY.

The Pettis County Medical Society held its annual banquet January 4th at the Falstaff Hotel in Sedalia. There were twenty-three members present and the banquet was thoroughly enjoyed by all. It consisted of ten courses. The management of the Falstaff Hotel deserves much credit for the manner in which the banquet was served. Drs. W. G. Cowan, S. G. Kelly, and Frank R. Morley, constituting the Committee on Arrangements, received much praise for the success of the banquet.

The following program of toasts was carried out, with Dr. E. F. Yancey as Toast Master: "X-Rays," Dr. M. T. Collins. "Then and Now," Dr. I. T. Bronson. "Specialism," Dr. F. L. Sutton. "Apropos," Dr. W. H. Evans. "Not Yet but Soon," Dr. W. S. Shirk. "Prognosis," Dr. W. J. Ferguson.

The address of Dr. W. H. Evans, the oldest member of the Society, was an event of special pleasure to all.

MEETING OF JANUARY 7TH.

Pettis County Medical Society met in regular session January 7th, at Maywood Hospital.

The following program was carried out in the regular meeting: "Acute Intestinal Obstruction in Adults," by Dr. E. F. Yancey. "Acute Intestinal Obstruction in Children," by Dr. Minerva Knott. "Chronic Intestinal Obstruction," by Dr. W. O. Dunlap.

The discussion was taken up by the doctors present and several good points brought out, the early surgical interference being especially dwelt on.

The new officers for 1907 were installed as follows: President, Dr. S. G. Kelly; Vice President, Dr. David P. Dyer; Secretary, Dr. Guy Titsworth; Treasurer, Dr. W. G. Cowan; Reporter, Dr. F. R. Morley; Board of Censors, Drs. W. J. Ferguson, H. B. Cole, and W. C. Overstreet; Delegate to State Society, Dr. W. J. Ferguson.

After the meeting adjourned the members and their wives, were entertained by Dr. and Mrs. Wood and the Maywood Hospital nurses.

MEETING OF JANUARY 21ST.

Pettis County Medical Society met January 21st, and the following program was rendered:

SYMPOSIUM ON PNEUMONIA.

Diagnosis, Dr. W. J. Ferguson. Pathology, Dr. H. B. Cole. Treatment, Dr. E. A. Wood.

Discussion by all the doctors present.

We now have forty-two members and we are having very interesting meetings.—FRANK R. MORLEY, M. D., Reporter.

PIKE COUNTY MEDICAL SOCIETY.

The next meeting will be held at Clarksville on February 4th. Following is the program of the evening which should prove of very great interest to all the members: "Membranous Croup," by Dr. Byrns; "La Grippe" by Dr. Walters; "Vomiting of Pregnancy" by Dr. Hereford; "Prophylaxis of Infection" by Dr. Dreyfus.—Dr. R. G. Hereford, Secretary.

PLATTE COUNTY MEDICAL SOCIETY.

The regular monthly meeting of the Platte County Medical Society was held in Platte City, Wednesday, January 2, 1907.

Dr. Redman, the newly elected president, delivered a short address, outlining the work for the year. He stated that he was trying to arrange an interesting and instructive programme. He assigns the subject several months in advance and if a man fails to read his paper at that time he will not be carried over until next month, but each month will have its own program.

Dr. Chastain presented his paper on "Indigestion." This paper was discussed freely by Drs. Herndon, Naylor, Redman, Shafer and Mizner.

Dr. Herndon opened the discussion on "Puerperal Lacerations of the Cervix Uteri," which was very interesting as well as instructive.

Dr. Naylor read a paper on "Tuberculosis," which brought forth a liberal discussion.

The Secretary was instructed to draft resolutions in regard to the Pure Food bill and Abortion bill and to send a copy of same to our representative.

Dr. C. E. Benham, of Parkville, was elected to represent our Society on the Auxiliary Committee of the State Committee on Public Health and Legislation.

Adjourned to meet in Platte City, on the 1st Wednesday in February, 1907.—G. C. Coffey, Secretary.

SCOTLAND COUNTY MEDICAL SOCIETY.

At the annual meeting held in December the following officers were elected for 1907: President, W. E. H. Bondurant, Memphis; vice-president, A. J. Shacklett, Rutledge; secretary-treasurer, A. E. Platter, Memphis; The board of censors: Drs. Baker, Johnson, Maynard; committee on Public Health and Legislation, Drs. Pile, Petty and Davis; Committee on Tuberculosis, Drs. Edelen, Foster, and Alexander.—O. F. Pile, Reporter.

ST. GENEVIEVE COUNTY MEDICAL SOCIETY.

The St. Genevieve County Medical Society held its regular monthly meeting January 9, 1907. The application of Dr. Edward Ford, River aux Vases, for membership was reported favorably by the board of censors.

Doctors Wilkins and Rutledge were appointed to prepare papers for next meeting.

The president appointed as member of the Committee on Public Health and Legislation, Doctors H. J. Morganstein, C. J. Hertich and J. A. Wilkins.

The next meeting will be held on the second Wednesday in February at St. Mary's.—R. W. LANNING, Secretary.

STODDARD COUNTY MEDICAL SOCIETY.

The Stoddard County Medical Society held its regular bi-monthly meeting at Dexter on Wednesday January 2, 1907. Owing to the stormy weather and the bad roads only two of the members outside of the local Doctors were present, viz., T. C. Allen of Bernie and W. B. Kerr of Dudley.

After the routine business of the Society was transacted Dr. T. C. Allen led in a discussion of Sec. 3. Chapter 2 of the by-laws.

Dr. I. B. Wingo presented two cases of equino varus which he had corrected, one by a plaster cast the other by adhesive plaster cast. Both cases were fully discussed after which the Society adjourned to the Jefferson Hotel for dinner.

The Society reconvened at 1:30 p. m. Dr. Slayden read a paper on "Pneumonia in the Adult," and Dr. Vernon contributed a paper on "Bronchial Troubles of Children." Both papers were discussed at length by all present.

The Society will hold its next meeting at Bloomfield, the 1st Wednesday in March.—GEO. W. VERNON, Reporter.